

# **REGIONAL INFORMATION REPORT 3A00-23**

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Alaska Department of Fish and Game  
Division of Commercial Fisheries  
333 Raspberry Road  
Anchorage, Alaska 99518

May 2000

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## **Subsistence and Personal Use**

### **Salmon Harvest Estimates**

#### **Yukon Area, 1999**

by

**Bonnie M. Borba**

**Helen H. Hamner**

**SUBSISTENCE AND PERSONAL USE  
SALMON HARVEST ESTIMATES,  
YUKON AREA, 1999**

by

Bonnie M. Borba

and

Helen H. Hamner

Regional Information Report<sup>1</sup> No. 3A00-23

Alaska Department of Fish and Game  
Division of Commercial Fisheries  
Arctic-Yukon-Kuskokwim Region  
333 Raspberry Road  
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## ABSTRACT

The Yukon Area includes all waters of Alaska within the Yukon River drainage and all coastal waters of Alaska from Point Romanof southward to the Naskonat Peninsula. Successful management of Yukon Area fishery resources is dependent upon obtaining accurate estimates of salmon harvests from the various fisheries it supports. This report documents the subsistence and personal use harvests within the Yukon Area.

In some portions of the Yukon Area, fishermen are required to obtain an annual subsistence household permit prior to salmon fishing. However, in the majority of the Yukon Area no regulatory requirements exist for fishermen to report their subsistence salmon harvest. To estimate the subsistence salmon harvest from villages in the non-permitted areas, the department has implemented a voluntary survey program. The 1999 survey program utilized subsistence harvest calendars, postseason household interviews, and postseason household telephone interviews and postal questionnaires. Stratified random sampling techniques were used to select Yukon Area households to be interviewed. Surveyors contacted 1,024 households in the surveyed villages throughout the Yukon Area in 1999. Information provided by these surveyed households was expanded to estimate the harvest of households that were not contacted. A total of 44,379 chinook (*Oncorhynchus tshawytscha*), 129,066 chum (*O. keta*), and 10,588 coho salmon (*O. kisutch*) were estimated as harvested by subsistence households in the survey portion of the Yukon Area in 1999. The chum salmon run consists of an early (summer) and late (fall) run. The chum salmon subsistence harvest was differentiated by its two distinctive runs and totaled 75,877 summer chum and 53,189 fall chum salmon.

In designated permit areas, fishermen are required to document their harvest on a permit and return the permit to the department at the end of the fishing season. A total of 369 households were issued subsistence permits in 1999, and 356 permits or 97 percent were returned at the time of this report. Of the total number of returned permits, 212 households indicated they had fished. The reported subsistence permit harvest was 6,136 chinook, 3,373 summer chum, 30,231 fall chum, and 9,396 coho salmon. This reported harvest does not include household permit harvest information from Stevens Village. Stevens Village residents, permit harvests are incorporated with the harvests collected during the postseason surveys.

One non-subsistence area is located within the Yukon Area in which salmon harvests are monitored with household personal use permits. A total of 107 household personal use permits were issued and returned in 1999. Of the returned permits, 69 households indicated that they fished. The reported personal use harvest was 331 chinook, 382 summer chum, 262 fall chum, and 153 coho salmon.

The number of fish provided to households for subsistence use from various Yukon Area test fish projects are also documented in this report. In 1999, a total of 2,790 chinook, 4,534 summer chum, 6,520 fall chum, and 901 coho salmon were provided to households for subsistence use from test fishery projects throughout the drainage.

An estimated 1,353 households participated in the Yukon Area subsistence and personal use fishery in 1999. Combining survey, permit, and test fishery information an estimated 53,636 chinook, 84,166 summer chum, 90,202 fall chum, and 21,038 coho salmon.

## INTRODUCTION

The Yukon Area includes all waters of Alaska within the Yukon River drainage and all coastal waters of Alaska from Point Romanof southward to the Naskonat Peninsula (Figure 1). For management purposes, the Yukon Area is divided into seven districts and ten subdistricts. The Lower Yukon Area consists of the coastal waters of the Yukon Area and that portion of the Yukon River drainage from its mouth to Old Paradise Village (Yukon River mile 301). The Lower Yukon Area is divided into four districts; the Coastal District and Districts 1, 2 and 3. The Upper Yukon Area consists of that portion of the Yukon River drainage upstream of Old Paradise Village to the Canadian border (Yukon River mile 1,224) and is divided into Districts 4, 5 and 6.

Five species of Pacific salmon are found in the Yukon River drainage: chinook (*Oncorhynchus tshawytscha*), chum (*O. keta*), coho (*O. kitsutch*), pink (*O. gorbuscha*), and sockeye (*O. nerka*) salmon. Chinook, chum, and coho salmon compose the majority of subsistence and personal use harvests. The chum salmon return consists of an early (summer chum) and late (fall chum) salmon run.

The purpose of this report is to document the 1999 Yukon Area subsistence and personal use salmon harvest. The estimated number of salmon harvested in subsistence and personal use fisheries within the Yukon Area is needed to effectively manage the salmon resource. Yukon Area subsistence salmon fishery and harvest information has been collected by the Alaska Department of Fish and Game (department) since 1961 (ADF&G 1999). Documentation of the subsistence harvest prior to 1961 is limited. However, early exploration reports attest to the importance of subsistence salmon harvests to people living in the Yukon River drainage (Zagoskin [1847] 1967; Allen 1887). Historical accounts document the use of large salmon harvests to support dogs, which were used as draft animals for transportation and packing (Richardson [1900] 1964; Gilbert and O'Malley 1921). Around 1930, the airplane began replacing the sled dog as a primary mail and supply carrier, which contributed to a gradual reduction in the need for subsistence salmon for dog food. Additionally, the introduction of snow machines during the 1960s accelerated the decline of sled dogs and the associated need for subsistence salmon harvests to feed them.

During the early 1970s, additional employment opportunities, including commercial fishing activities, became available to rural residents (ADF&G 1985). From 1974 through 1977 the sale of subsistence caught salmon roe was legal. The slight increase in subsistence harvests observed in those years likely resulted from the legalization of the sale of subsistence caught salmon roe. Beginning in the early 1980s, there was a renewed interest in the recreational use and racing of sled dogs. As the number of dogs increased throughout the drainage, the corresponding need for subsistence salmon to feed dogs also increased. Based on recent survey information the practice of keeping sled dogs is much more common in the Upper Yukon Area than in the Lower Yukon Area. The number of dogs within a household is considered to be a major factor affecting the amount of subsistence salmon that a household needs.

Numerous rural communities are located along the coast and major river systems within the Yukon Area. The residents in these rural communities are primarily of Yupik Eskimo and Athabaskan Indian descent. Excluding the greater Fairbanks area (approximately 84,000 people), the most recent

census indicates that in 1998 the rural resident population of the Yukon Area was approximately 21,700 people (Williams 1999). The recent five-year (1993 to 1997) average population has remained stable near 21,000 people, excluding the greater Fairbanks area. An increase in population within the rural communities could increase the need for subsistence salmon for human consumption.

### ***Subsistence and Personal Use Salmon Fishery Description***

Yukon Area subsistence salmon fishermen primarily use drift gillnets, set gillnets, and fish wheels to harvest salmon. Set gillnets are utilized throughout the Yukon Area. Drift gillnets are used extensively to harvest salmon for subsistence purposes in that portion of the Yukon River drainage 18 miles below Galena (Yukon River mile 514). Although fish wheels are a legal gear type for subsistence fishing throughout the drainage, they are essentially only used in the Upper Yukon Area, where an ample supply of wood utilized for construction and operation of such gear are available.

Subsistence salmon fishing activities in the Yukon Area primarily occur from late May through early October. However, salmon fishing in May and October is highly dependent on the ice conditions on the river. Fishing activities are usually based from a fish camp or a home village. Extended family groups, representing two or more households, often work together to harvest, cut, and preserve salmon for subsistence use. Some households from communities not located along the mainstem Yukon River, such as Shageluk, operate fish camps along the mainstem Yukon River.

A majority of subsistence and personal use salmon harvested in the Yukon Area originate from stocks within the Yukon River drainage. However, communities within the Coastal District also harvest stocks bound for other areas. Since 1992, the department has conducted subsistence surveys in the Yukon Area coastal villages of Hooper Bay and Scammon Bay. Based on a salmon tagging and recapture study conducted in 1986 (Kerkvliet 1986) the residents of the coastal villages of Hooper Bay and Scammon Bay primarily harvest Yukon Area chum and pink salmon stocks. However, the tagging study documented that Norton and Kotzebue Sound salmon stocks were also present in the area.

A significant portion of the salmon harvested are frozen, dried, or smoked for later human consumption. The majority of the large (greater than 21 inches in length) chinook salmon harvested are used for human consumption. A large proportion of the small chinook salmon, often referred to as "jacks," are also used for human consumption, although a significant proportion of them are used for dog food. Summer chum, fall chum, and coho salmon are also used for human consumption; however, a relatively large percentage of these salmon are harvested to feed dogs. Dogs are often fed scraps that become available during the processing of freshly harvested salmon, and relatively few whole fresh salmon are fed to dogs. The majority of summer chum salmon is dried for a winter supply of dog food. Additionally, fall chum and coho salmon are commonly "cribbed" for dog food. Cribbing is the freezing of fish by natural air temperature for use later in the winter. There is usually little wastage of fish taken for subsistence purposes, although damp weather may cause some drying fish to spoil.

By regulation, personal use fishermen may only use set gillnets or fish wheels to harvest salmon. Currently, personal use salmon fishing is only allowed within a portion of the Tanana River drainage located near Fairbanks. Personal use salmon fishing activity in this area typically occurs from late June through early October. Only Alaska residents are eligible for participating in personal use fisheries. Personal use fish can only be used as food for human consumption or for use as bait by that individual or his immediate family. Personal use caught fish cannot be fed to dogs or other animals (White 1991, Memorandum).

Many subsistence or personal use fishermen also participate in the commercial salmon fishery. During the Yukon Area commercial salmon fishing season, additional restrictions on subsistence and personal use salmon fishing may be required to assist in the enforcement of commercial fishing regulations. However, during the salmon fishing season, substantially more time is allowed for subsistence and personal use salmon fishing than for commercial fishing. Throughout the early history of the Yukon Area commercial salmon fishery, commercial and subsistence fishing periods coincided. However, in 1993 the Alaska Board of Fisheries adopted regulations which separated subsistence and commercial salmon fishing times in Districts 1, 2, and 3 and in the lower portion of District 4 (Subdistrict 4-A). In these areas, subsistence salmon fishing is allowed seven days per week but may not occur 24 hours prior to and immediately following the commercial salmon fishing season. By regulation, once the commercial salmon season is open, subsistence salmon fishing may not occur 18 hours immediately before, during, and 12 hours after each District 1, 2 or 3 summer season commercial salmon fishing period. During the fall season in Districts 1, 2 and 3, subsistence salmon fishing may not occur 12 hours immediately before, during, and 12 hours after each commercial fishing period. In Subdistrict 4-A, subsistence salmon fishing may not occur 12 hours immediately before, during, and 12 hours after each commercial salmon fishing period throughout the season.

In the upper portion of District 4 (Subdistricts 4-B and 4-C) and in Subdistricts 5-B and 5-C, subsistence salmon fishing is allowed seven days per week until 24 hours prior to and immediately following the commercial salmon fishing season. In these areas, subsistence salmon fishing periods coincide with commercial salmon fishing periods. Additional subsistence-only salmon fishing periods are also allowed during the commercial salmon fishing season. In Subdistrict 5-D, subsistence salmon fishing is allowed seven days a week.

In Subdistrict 5-A, subsistence fishing is similarly allowed seven days a week until 24 hours prior to the commercial salmon fishing season. However since 1994, excluding 1998, the subsistence fishing schedule in Subdistrict 5-A allows subsistence fishing five days a week after the closure of the commercial salmon fishing season. In 1998, the Alaska Board of Fisheries, relaxed restrictive elements of the Toklat River Fall Chum Salmon Rebuilding Management Plan and allowed Subdistrict 5-A to subsistence salmon fish seven days a week. When the escapement objectives were not met, the restrictive elements were reinstated and subsistence fishing in Subdistrict 5-A was once again reduced during the 1999 season.

Since 1988, subsistence and personal use fishing within the lower Tanana River drainage (currently subsistence fishery in Subdistricts 6-A and 6-B and personal use salmon fishery in Subdistrict 6-C, Figure 1) is allowed for two 42-hour periods per week unless altered by emergency order. In the upper Tanana River drainage, subsistence fishing is allowed seven days a week.

## *History of Survey and Permit Methodologies*

Subsistence harvest surveys have been conducted annually by the department since 1961. Survey methodologies prior to 1988 were varied, although in all cases surveyors attempted to census all known *fishing families* in a village. A fishing family was defined as one or more households that fished together. The department's Division of Subsistence standardized the survey methodology in 1988 (Walker et al. 1989). In each community, all households were identified and stratified into those that *usually fish* and those that *usually do not fish*. Subsistence salmon harvest surveys utilize personal or telephone interviews, harvest calendars, and mailed questionnaires to collect household information. Subsistence harvest information gathered through these surveys was expanded for non-contacted fishing households to provide an annual community estimate.

In 1990 and again in 1991, the method for stratifying households was refined by the Division of Commercial Fisheries to improve the accuracy and precision of the subsistence harvest estimate (Holder and Hamner 1991; Bromaghin and Hamner 1993). Since 1990, households have been classified into one of five categories. These categories consist of households that are light, medium, and heavy harvesters, those that do not harvest salmon and those with unknown harvest levels. The 1990 through 1995 use group classifications were based on the household's annual harvest estimates available since 1988. Beginning in 1996, use group classifications have been based on the average harvest of two recent years within the most recent three-year period. A stratified random sample (Cochran 1977) is drawn from the strata formed by combinations of village and harvest levels. The current method assumes that households tend to harvest the same level in the year being surveyed as they have in recent years. The current design samples the households with a recent history of large harvests more intensively.

Data analysis from 1990 to 1995 included using the district's variance to estimate a stratum's variance if only one household was contacted in the stratum. In addition, the district's mean and variance was used to estimate a stratum mean if no households were contacted in the stratum. Since 1996, if only one household was contacted in a stratum, the stratum variance was not estimated. In addition, if no households were contacted in a stratum, the mean and the variance were not estimated.

Permits for subsistence and personal use salmon fishing are required in select areas of the Upper Yukon Area. The areas that require salmon fishing permits and the type of permit required (subsistence or personal use) have varied through time. The first annual subsistence permits were issued in 1973. Personal use permits have only been required in select areas since 1987. From 1973 until 1994 permits had been required for the harvest of salmon carcasses within the Delta River (Borba and Hamner 1998). In November 1994, the Board of Fisheries adopted regulations that closed the lower portion of the Delta River to the collection of salmon carcasses. Permits are currently required for subsistence fishing in the Yukon River drainage between Hess Creek and the Dall River (Yukon River bridge area) and between the upstream mouth of Twenty-Two Mile Slough and the Canadian border; subsistence and personal use salmon fishing within the Tanana River drainage; subsistence fishing and personal use whitefish (*Coregonus* spp. and *Prosopium* spp.) and sucker (*Catostomus catostomus*) fishing in the upper Tanana River drainage; and

subsistence northern pike (*Esox lucius*) fishing in the Tolovana River drainage. In permitted areas, fishing households are required to obtain a permit prior to actively fishing and return the permit at the end of the season with a record of the harvest. The department uses the information collected from permitted households to document the harvest in these areas.

### *History of the Personal Use Fishery*

Personal use fishing is considered a lower priority use of the resource than subsistence fishing. Prior to the development of personal use fisheries all residents of Alaska were eligible to fish anywhere in the state under subsistence regulations. However in 1986, subsistence hunting and fishing became limited to rural Alaskan residents. The Alaska Board of Fisheries created the personal use salmon fisheries in the Yukon Area for non-rural state residents due to changes in the state subsistence law. The regulation directed that fishermen residing within non-rural areas be considered personal use fishermen regardless of where they fished. Correspondingly, fishermen residing in rural areas were considered subsistence fishermen regardless of where they fished. The residents of the greater Fairbanks area were considered non-rural fishermen. In 1987, a personal use fishery was implemented in the Yukon Area that initially affected only the fall chum salmon fishery. Beginning in 1988, personal use regulations were in effect for all salmon species in the Yukon Area. Under the statutes and regulations that were in effect from 1988 until July 1, 1990, Alaska residents domiciled in non-rural areas were prohibited from participating in subsistence fisheries. During that time, non-rural residents harvested salmon under personal use fishing regulations wherever they fished. Personal use salmon harvested in the Lower Yukon Area and upper Yukon River drainage during this period of transition are documented in prior reports (Borba and Hamner 1998).

Effective July 1, 1990, the Alaska Supreme Court struck down the rural residency requirement for subsistence participation (*McDowell vs. State*). In that ruling, the Alaska Constitution prevented the allocation of fish and game to people based on the location of their residence. The result was that every Alaska resident became eligible to subsistence fish. In effect, this decision made the personal use category obsolete in the Yukon Area. Anyone eligible for a personal use permit could also obtain a less restrictive subsistence fishing permit. For this reason, Yukon Area personal use salmon fishing permits were not issued during 1991 and 1992.

During a special session in 1992, the legislature revised the subsistence law to allow the Joint Boards of Fisheries and Game to divide the state into subsistence and non-subsistence areas. Personal use fishing was authorized inside the non-subsistence areas and the regulations that allowed subsistence fishing were repealed. The Fairbanks Nonsubsistence Area, the only non-subsistence area in the Yukon Area was created consisting of the Fairbanks North Star Borough and surrounding areas. The Fairbanks Nonsubsistence Area included the Tanana River drainage above the confluence of the Wood River upstream to the mouth of the Volkmar River on the north bank of the Tanana River and to the mouth of the Johnson River on the south bank of the Tanana River (Figure 2). During the 1993 fishing season, personal use fishery regulations were implemented in this area. In October 1993, the Alaska Superior Court ruled in the *Kenaitze* case that the non-subsistence area provision of the 1992 subsistence law was unconstitutional because it discriminated between different areas of the state. Although the state was initially granted a stay on the effects of that decision pending appeal to the Supreme Court, the stay was vacated on April 11, 1994. With



the stay lifted, the state was required to provide subsistence fishing in non-subsistence areas during the 1994 season. All Alaskan residents were again qualified as subsistence users during the 1994 fishing season and, although available, no personal use permits were issued.

On May 9, 1995, the Alaska Supreme Court reversed the Superior Court's ruling, upholding the constitutionality of the non-subsistence areas. Once again the Joint Boards of Fisheries and Game adopted regulations that reestablished the Fairbanks Nonsubsistence Area. Currently, no subsistence fishing is allowed within non-subsistence areas however personal use fishing regulations are applicable. The non-subsistence area regulations primarily affect salmon fishermen within Subdistrict 6-C, which is entirely within the boundaries of the Fairbanks Nonsubsistence Area. By regulation, the Subdistrict 6-C personal use salmon fishery has a household permit limit of 10 chinook, 75 summer chum salmon, and 75 fall chum and coho salmon combined. Additionally, the fishery has a harvest limit of 750 chinook, 5,000 summer chum salmon, and 5,200 fall chum and coho salmon combined. These harvest limits have historically been applied to either the personal use or the subsistence fisheries within Subdistrict 6-C, whichever one was being prosecuted.

### ***History of Commercial-Related Harvests***

It has become more difficult to distinguish between subsistence and commercial harvests when commercial fishermen extract and sell only the roe of the fish, commonly referred to as roe fisheries. Female salmon flesh that remains after the roe has been removed and sold commercially is referred to as a stripped carcass. As a byproduct of the commercial roe fishery, stripped carcasses are available to meet subsistence needs. Subsistence salmon harvests are defined as those that are harvested under subsistence fishing regulations. Salmon taken under commercial fishing regulations that provide for both subsistence and commercial use are assigned to a special category referred to as *commercial-related* harvest. Commercial roe fisheries began in the Upper Yukon Area in 1978, and the first sale of salmon roe occurred in the Lower Yukon Area in 1996. Commercial-related salmon harvests can be combined with the subsistence harvest estimate to provide the total potential subsistence utilization. The commercial-related harvests can also be combined with salmon sold in the round to provide an estimate of the commercial harvest.

In most of the Yukon Area with the exception of Subdistrict 4-A, the commercial-related harvest is a small proportion of the subsistence utilization. The large local subsistence needs can easily absorb the commercial-related harvest in most areas. However, during years of large commercial harvests, the number of female summer chum salmon carcasses available from the commercial roe fishery in Subdistrict 4-A, along with the incidental harvest of male chum salmon, has been greater than the documented subsistence utilization levels. The department estimates the number of male and female summer chum salmon harvested during a commercial fishing period from the pounds of roe sold. This method of expansion estimates the numbers of fish harvested by using both the observed pounds of summer chum salmon roe per female and the sex ratio information collected during each commercial period.

From 1978 to 1990, subsistence survey questions in most areas were not structured to identify the commercial-related harvests. During these years it is believed that many of the commercial-related salmon harvests were reported as subsistence harvests. In 1984, the Division of Subsistence

conducted the first subsistence surveys directed at addressing the amount of the commercial-related harvests in Subdistrict 4-A villages of Kaltag and Nulato. These surveys attempted to exclude the commercial-related summer chum salmon used for subsistence purposes from the subsistence harvest. As a result, the subsistence summer chum salmon harvest estimates for Kaltag and Nulato in 1984 were well below harvest estimates for previous years. Efforts to identify the commercial-related summer chum salmon harvest from the Subdistrict 4-A subsistence harvest estimates were continued from 1986 to 1989. During these years of transition, it is probable that some portion of the commercial-related harvest continued to be reported as subsistence harvest. It was not until 1990 that survey questions and fishermen's reports resulted in the satisfactory separation of subsistence utilization into subsistence and commercial-related harvests, markedly reducing estimated subsistence harvests (Figure 4).

Prior to 1990, the commercial harvest included the number of fish sold in the round and the number of females taken to produce the roe sold. Since 1990, regulations require the reporting of commercial harvests in Subdistrict 4-A as the estimated number of female salmon taken to produce the roe sold plus the estimated incidental harvest of male salmon. Although not required by regulation, the department estimates the commercial harvest of summer chum salmon in Subdistricts 4-B and 4-C and in the lower Yukon Area in the same manner as in Subdistrict 4-A.

Prior to 1993, subsistence and commercial periods were conducted simultaneously, therefore during commercial fishing periods some salmon were also harvested under subsistence regulations. With few exceptions, since 1993, the subsistence and commercial periods have been separated by time in Subdistrict 4-A, and all fish harvested and not sold in the round during the commercial periods are considered commercial-related. Subsistence and commercial periods were also separated by time in District 1, 2, and 3. In areas where salmon flesh markets prevail, households still harvested a number of fish for their own household use that appeared to be unaccountable. The Board of Fisheries established a reporting system for all fish "taken but not sold" during commercial fishing periods by requiring documentation of these fish on the commercial fish tickets statewide. This regulation remained in effect for the majority of the Yukon Area from 1993 until 1997. Due to the confusion this regulation created as to where fishermen were reporting the harvests and the concern for double counting fish in the final salmon harvest estimates the regulation was removed within the Yukon Area by the Board of Fisheries, with the exception of Subdistrict 6-C. To avoid exceeding the personal use salmon permit harvest limit in Subdistrict 6-C, commercial fishermen report fish "taken but not sold" on fish tickets and not on their household permits.

An additional series of questions to address the usage of commercial-related harvests were added to the Subdistrict 4-A commercial fishermen survey questionnaire during the 1992, 1993, and 1995 surveys. The additional survey questions were initiated to evaluate the methods used to estimate the number of salmon harvested in Subdistrict 4-A. In salmon roe fisheries within Subdistrict 4-A, the department estimated the number of fish harvested based on the pounds of roe produced per female and the sex ratios observed during each commercial fishing period. These estimates were compared to what was reported on commercial fish tickets. The majority of the fishermen surveyed agreed that the department's estimate based on sampling was a better representation of the actual harvest. The additional survey questions have since been discontinued. However, the department continues to estimate the commercial-related harvests of individuals selected to be surveyed in a given year who participate in commercial fisheries in Subdistrict 4-A. During the survey the department's estimate

is brought to the attention of the fishermen for confirmation. Because the additional survey questions also documented the practice by Subdistrict 4-A fishermen of releasing live male chum salmon directly back into the river during commercial roe fisheries, the department's estimates of commercial-related may be slightly larger than the actual harvest.

In 1994, the Alaska Board of Fisheries adopted regulations that allowed a commercial summer chum salmon fishery on the Anvik River (5 ACC 05.368. Anvik River Chum Salmon Fishery Management Plan). A commercial summer chum salmon roe fishery occurred in the Anvik River from 1994 through 1997. The Anvik River is within Subdistrict 4-A and has been managed as a terminal harvest commercial fishery. The Anvik River commercial summer chum salmon fishery has only involved the sale of roe, which results in additional stripped female carcasses becoming available to subsistence users. Commercial-related harvests in the Anvik River fishery are based only on the estimated number of female salmon taken to produce the roe sold. The gear types utilized in this fishery, seines, generally allow for the release of male chum salmon.

## **OBJECTIVES**

The objectives for 1999 were to estimate:

1. the subsistence and personal use salmon harvest by species, community, districts, subdistricts, or major tributaries within the Yukon Area;
2. select demographics which include the number of fishing households and the number of people in the fishing households in the Yukon Area;
3. the primary gear types utilized by the fishermen participating in the Yukon Area subsistence and personal use salmon fisheries;
4. the number of salmon shared within and between surveyed communities;
5. the number of fish provided to communities for subsistence use that originated from the Yukon Area test fishery program;
6. for select Yukon Area communities the number of dogs, number of households with dogs, number of households that feed fish to dogs, and the number of fish fed to dogs;
7. the number of other non-salmon, primarily freshwater fish species utilized by the communities which participate in the Yukon Area subsistence and personal use fisheries;

Additionally, provide documentation of the number of households in surveyed communities that indicated their subsistence salmon needs were not met, including descriptions of what they felt contributed to their lack of success.

## METHODS

Personal interviews and returned permits are the primary sources of information used to estimate the number of subsistence and personal use salmon harvested in the Yukon Area. Test fisheries are used throughout the Yukon River drainage to index salmon runs. Salmon harvested in test fisheries are made available to meet local subsistence needs. Salmon provided to subsistence households by these test fisheries are documented by each individual project. Information from surveys, permits, and test fisheries are combined to estimate Yukon Area subsistence and personal use harvests. For the purposes of this report, subsistence use includes estimated subsistence harvests plus commercial-related harvests. However, it should be noted that some Stevens Village residents fish in both permitted and non-permitted areas. Subsistence salmon harvest estimates for Stevens Village are based on survey information, which incorporates harvests reported on permits. Stevens Village permit information is removed from the permit total when combining permit harvest information with survey results to avoid double counting the salmon harvested.

### *Subsistence Surveys*

The 1999 survey program was designed to provide an accurate estimate of the salmon harvested by subsistence fishing households residing in surveyed villages. Primary components of the survey program were subsistence harvest calendars mailed out prior to fishing activities, postseason personal interviews, and follow-up telephone or postal surveys.

The household list database is updated each year by using survey information collected from the previous year. Additionally, the survey program uses information collected from various other sources to update the household list. These sources include: knowledgeable individuals in each community who are contacted to review household lists and various village census lists, telephone and utility registers, and information obtained from applicants for the Alaska Permanent Fund. The 1999 household list was updated by removing 209 households from the previous year's database. The households that were removed included households that moved out of a surveyed community and into another surveyed community, households that were combined with other established households within a surveyed community, or households that no longer resided in a Yukon Area surveyed community. Based on the 1998 surveys Additionally, 142 households were added to the 1999 household database based on the previous years surveys. New households included those families that moved into a surveyed community or household members who had recently established a household of their own within a survey community. Information was also collected from harvest calendars returned during the previous season. The collected information is used to ensure households are placed in the correct stratum prior to selection for next year's survey.

The department conducted two mass mailings and distributed subsistence harvest calendars to 1,214 Lower Yukon and 1,054 Upper Yukon Area households that were identified in the database prior to salmon fishing activities. The Lower Yukon Area calendars contained the months of May through September (Appendix C.1). The Upper Yukon Area calendars contained the months of June through October. Additional calendars were made available to households upon their request from department offices in Emmonak and Fairbanks. The calendars provided space for fishermen to record their daily salmon harvest by species. Enclosed with the 1999 calendar was a letter of

appreciation for the fishermen's participation in the subsistence survey program. The letter also included the previous year's subsistence and personal use salmon harvest estimates by village (Appendix C.2). Harvest information from calendars returned prior to or during the subsistence survey was used to assist in the survey of the household. In an effort to improve calendar returns during surveys of the villages, posters were sent to village post offices to remind fishermen to have their harvest calendars available for the surveyors. Additionally, announcements notifying fishermen of the surveyor's schedule were broadcast over local radio stations prior to the surveyor's arrival in the village.

The database of Yukon Area households located in surveyed communities formed the framework for the stratified random sampling program. Each household in the database was assigned to a subsistence harvest category. These harvest categories consisted of: "Unknown, do not fish, light, medium, or heavy". Households that had no previous harvest information available for placing them into a harvest classification were categorized as "unknown". Households with historical harvest information were placed in a harvest category based upon their average annual harvest of salmon from the two recent years in the time period 1995 to 1997. If household harvest information was not available for two recent years, the household use group classification was left unchanged. The 1998 information was excluded from use as a basis for reclassification of households harvest categories because of low returns of salmon and subsequent subsistence restrictions implemented during the fall season. In the Lower Yukon Area, an average harvest of 1 to 200 salmon was considered "light", a harvest of 201 to 500 salmon was considered "medium", and a harvest greater than 500 salmon was considered "heavy". In the Upper Yukon Area, an average harvest of 1 to 100 salmon was considered "light", a harvest of 101 to 700 salmon was considered "medium", and a harvest greater than 700 salmon was considered "heavy".

A stratified random sample (Cochran 1977) of households was drawn from the stratified population, with strata being defined by the combinations of community of residence and harvest category. In general, strata sample sizes were established based upon the level of harvest: all of the households in the "unknown", "medium" and "heavy" categories; 30 percent of the households in the "light" category; and 10 percent of the households in the "do not fish" harvest category were identified to be sampled during the survey. Further, if any stratum sample size obtained using these guidelines contained five or fewer households, the sample size was made equal to the stratum size. Since 1996, all households were sampled in survey communities with 40 or fewer households.

Several exceptions to this sampling strategy were adopted in 1991 and have been continued in 1999. Sample sizes were increased for select harvest categories in the villages of Emmonak and Pilot Station due to large numbers of test fish being provided to households and its affect on the number of fishing households; in the village of Tanana due to the relatively large subsistence harvests; and in Holy Cross due to an unusual chinook salmon harvest estimate in one particular year. In Emmonak, Pilot Station, and Tanana, 30 percent of the households in the "do not fish" harvest stratum and 50 percent of the households in the "light" harvest stratum were identified to be sampled. In Holy Cross, 50 percent of the households in the "light" harvest strata were identified to be sampled. These sampling efforts were intended to increase the precision of harvest estimates from these villages.

Prior to conducting surveys, the surveyors received an orientation that included a review of the project's operational plan, survey form instructions, profiles of villages to be surveyed, an overview of the Yukon Area fisheries, and an update on pertinent issues related to the current fishing season. Additionally, attempts were made to have an experienced surveyor conduct joint surveys with an inexperienced surveyor during the first several interviews. In 1999, employees from the previous year returned to duty allowing the project to run smoothly with experienced surveyors. Appendix C.3 is an example of the 1999 subsistence salmon postseason interview form. During personal interviews, both the surveyors and the surveyed individuals contribute to the quality of the estimate. Surveyors have a responsibility to contact all the households to be surveyed and to ensure that questions are asked consistently and understandably, while fostering a cooperative atmosphere. Household members being interviewed have the responsibility to answer the questions to the best of their ability.

Interviews were designed to determine if the household participated in the 1999 subsistence salmon fishery, the number of salmon harvested by species, the number and species of salmon processed by the household for its own use, how many other households assisted in the salmon harvest, which other households shared the harvest, the number of salmon used that were a byproduct of a commercial fishery (commercial-related), the primary gear type used, the location where the subsistence salmon harvest occurred, and whether the household's subsistence needs were met. Surveyed households were also asked if they received any salmon from other fishermen or from a test fish project. In response to an agenda change request brought before the Board of Fisheries in 1998 concerning the use of chinook salmon for dog food, two related questions were added to the 1999 survey. An estimate of chinook salmon including "jacks" was added to the existing question concerning the harvest of salmon put up for dog food from either the subsistence or commercial fishery. Additionally, the households that indicated they fed fish to dogs were asked if they had ever fed chinook salmon or "jacks" to dogs in the past.

The survey questions concentrated on chinook, summer chum, fall chum, and coho salmon, but households were also asked about their harvest of pink salmon and other miscellaneous non-salmon species. Reported harvests of whitefish, northern pike, and sheefish (*Stenodus leucichthys*) are expanded to obtain estimates of total harvests for surveyed communities. The reported harvests of other non-salmon species are not expanded because of the limited quantity of information that is usually obtained. The survey also included questions regarding the number of people and dogs in the household and the number of chum and coho salmon fed to dogs. Households that indicated they had not met their subsistence salmon needs were queried regarding the cause. Members of households that participated in the interview process were given a monogrammed pen or ruler as a gesture of the department's appreciation. The items were featured in the department's colors of blue and gold and the text on them identified the program "Alaska Department of Fish & Game - Yukon River- Subsistence Salmon Survey." Additionally, everyone who returned a properly filled out subsistence survey calendar became eligible for a \$200 lottery.

Although the households are stratified according to household salmon harvests and not based on household use, an estimate of total salmon use is generated from the various components of the survey questions. Estimated use includes salmon harvested during subsistence activities, fish received from other individuals or test fisheries, and those retained from commercial harvests.

An attempt was made to conduct telephone interviews of all households that were to be surveyed, but were not personally contacted by surveyors while in the community. Survey questionnaires, including a postage-paid return envelope, were mailed to households that were not contacted by personal or telephone interviews. The collection of personal and telephone interviews as well as returned postal survey responses was assumed to constitute a stratified random sample. Estimation was performed using classical stratified random sampling methods (Cochran 1977).

### ***Subsistence Permits***

In 1999, households were required to obtain subsistence fishing permits in select areas of the Yukon River drainage prior to conducting fishing activities. Subsistence fishing permits were required in portions of District 5 of the Yukon River, in Subdistricts 6-A and 6-B, and in the upper Tanana River drainage. Since 1990, permit applications for the current season have been mailed to all permittees who returned their permit from the previous season. Subsistence permit applications sent to rural communities included a letter explaining how to apply by mail (Appendix C.7). The letter also provided a schedule of when a department representative would be present in select villages if the applicant preferred to be issued a fishing permit in person. Permits were issued during these preseason permit issuing trips in the villages of Nenana, Manley, Minto, Central, Circle, Delta Junction, Tok, Dot Lake, Tanacross, Northway, and Eagle. Permits were also issued in person or by mail throughout the season from department offices in Fairbanks, Delta Junction, and Tok. Other types of subsistence household fishing permits available in the Tanana River drainage included whitefish and sucker permits upstream of the confluence of Wood River, as well as northern pike fishing permits for portions of the Tolovana River drainage.

Most household fishing permits issued in 1999 had an expiration date of October 15, 1999. Due to the remoteness of certain fishing areas or because of later fishing patterns, several permits had later expiration dates. All Tolovana River drainage northern pike fishing permits, Kantishna River drainage salmon fishing permits, and the majority of subsistence whitefish and sucker permits in the upper Tanana River drainage expired on December 31, 1999.

Permit holders were required to keep a record of their daily fish harvest on the permit and return the permit to the department within 10 days of the expiration date. Households with outstanding expired permits who did not report their required harvest information were sent up to two reminder letters, each generally two weeks apart (Appendices C.8 and C.9). Telephone contact with households that did not respond to these reminder letters was attempted as a final measure.

Holders of subsistence salmon permits in the upper portion of Subdistrict 6-B are required to report their harvests weekly for inseason management purposes. Fishermen who fished in that area and complied with the verbal reporting requirement at least once during the fishing season, but who failed to return their permit at the end of the season, were also sent reminder letters. The letters expressed the department's appreciation for the verbal inseason reports and asked them to confirm their season's total harvest (Appendix C.8). In the event the original permit was lost, the reminder letters served as a substitute means for reporting total harvests by species, but the daily harvest information was unattainable. Harvests are tabulated postseason for all permit holders who returned their permit, returned a completed reminder letter, or verbally reported their harvest information.

### ***Test Fisheries***

Test fishery projects are operated annually throughout the Yukon River drainage by various agencies or organizations. Salmon harvested in Yukon Area test fisheries are frequently provided to local subsistence households to assist them in meeting their needs. It is assumed that salmon provided from test fisheries replace those that would have been obtained through more traditional subsistence fishing activities. Salmon harvests provided to subsistence households from test fisheries are included in village subsistence harvest estimates.

Through the years, test fishery projects have utilized different methods to document the test fish harvests provided to local households. In 1999, test gillnet fisheries were operated by various agencies and organizations in the Yukon River delta, Mountain Village, Pilot Station, and Kaltag and test fish wheels were also operated in several locations (Figure 1). One fish wheel was operated on the north bank and one on the south bank of the Yukon River near the village of Tanana. Two sets of fish wheels, one on each bank of the Yukon River, were operated at the "Rampart Rapids" and a pair at Rampart as part of a mark-recapture project. Three test fish wheels were operated on the Tanana River as part of a dual mark-recapture project to estimate returns of fall chum and coho salmon within the Tanana River above the Kantishna River and in the Toklat River via the Kantishna River. One tagging fish wheel was located on the north bank of the Tanana River above the confluence with the Kantishna River, and the other was located just within the Kantishna River. The recovery wheels included one near the village of Nenana on the Tanana River and two located within the Toklat River, a tributary of the Kantishna River. The test fish wheels within the Yukon River drainage primarily operate with the use of live boxes.

### ***Personal Use Permits***

Personal use salmon fishing permits were required in Subdistrict 6-C during the 1999 fishing season. Personal use fishing permits for whitefish and suckers were required within the entire Fairbanks Nonsubsistence Area (Figure 2). Since 1996, personal use permit applications for the current season have been mailed to all households that returned their permit from the previous season (Appendix C.6). Applications mailed to qualified households included a letter explaining how to apply for a personal use permit by mail or in person. Household fishing permits were also required for personal use harvesting of whitefish and suckers within the Fairbanks Nonsubsistence Area. Household permits for the taking of personal use salmon had an expiration date of October 15, 1999. Personal use whitefish and sucker permits in the Fairbanks Nonsubsistence Area are issued for time periods from January through December of the current year to accommodate harvests of these species during the winter months. Personal use salmon fishermen within Subdistrict 6-C are also required to report their harvest weekly for inseason management purposes. Requirements for recording daily fish harvests on the permit and procedures for the retrieval of permit harvest information by the department are identical to those performed for subsistence permits.



## RESULTS

A total of 53,636 chinook, 84,166 summer chum, 90,202 fall chum, and 21,038 coho salmon were estimated to have been harvested and 1,353 households were estimated to have participated in the Yukon Area subsistence and personal use fisheries in 1999 (Table 1). The Yukon Area includes the Alaskan portion of the Yukon River drainage and the communities within the Coastal District. These harvest estimates include salmon given away by Yukon Area test fish projects. The 1999 permit harvest information is based on permits returned as of March 31, 2000. Appendices B.1 through B.4 document the historical, annual subsistence salmon harvest from 1988 to 1999 by species and by community of residence. Additionally, Appendix B.7 documents the historical personal use harvest from permits issued since 1987 to the present, by species and by permit area.

### *Subsistence Surveys*

The stratified random sampling design utilized by the survey program identified 1,124 households to be surveyed in 1999. Surveyors attempted to interview a member of each household identified in the sample, preferably the primary harvester. A total of 1,024 households, or approximately 91 percent of the households identified to be sampled, were contacted in 1999 (Table 2). The contact number does not include six households who when approached, declined to participate in the personal interview. An estimate of 9,549 people was drawn from the 1999 survey database containing 2,519 households, which reside in the 34 Yukon Area communities included in the survey area (Table 3). Surveyors from the department's Division of Commercial Fisheries traveled to villages between September 7 and November 5, 1999. A total of 227 calendars, or 10 percent of the estimated 2,268 calendars distributed, were either collected by surveyors during the interviews or were received in the mail by the department. The department would like to congratulate Patrick Tam of Emmonak, the \$200 lottery winner for returning a completed 1999 harvest calendar. Follow-up survey questionnaires mailed to those households that surveyors were unable to contact by other means were often returned incomplete, resulting in partial surveys. Attempts to contact households by telephone had limited success. Because some individuals provided partial information during the survey, the number of households contacted for a given question varies. In reporting survey results, the greatest number of contacted households is provided for each topic.

In the survey area, an estimated 1,072 households participated in the subsistence salmon fishery, approximately 43 percent of the estimated total number of households (Table 4). Primary gear types used by households in surveyed villages that reported fishing included 35 percent set gillnet, 57 percent drift gillnet and 7 percent fish wheel (Table 5).

The estimated number of subsistence salmon harvested by surveyed households was 44,379 chinook, 75,877 summer chum, 53,189 fall chum, and 10,588 coho salmon (Table 6 and Appendix A.1–A.4). Tables 7 through 10 identify subsistence salmon harvest estimates by species, by community and by fishing area. Commercial fishing districts, subdistricts and major tributaries of the Yukon River represent fishing areas.

The 1999 survey included questions concerning the harvest of pink salmon and select non-salmon species. The pink salmon harvest was estimated to be 681 fish. Approximately 92 percent of the pink salmon harvested were by communities within the Coastal District (Table 11). Pink salmon exhibit a low (odd year) and high (even year) abundance two-year cycle. The 1999 pink salmon run to the Yukon Area was a low abundance year in the cycle. Whitefish are the most utilized miscellaneous non-salmon species harvested throughout the drainage. Whitefish harvests are distinguished between large whitefish (4 pounds or greater) and small whitefish (less than 4 pounds). The 1999 Yukon Area subsistence harvest includes expanded estimates of 24,907 large whitefish, 25,841 small whitefish, 16,928 northern pike, and 12,550 sheefish (Table 11).

The estimated numbers of salmon used for subsistence purposes within Yukon Area surveyed villages in 1999 was 41,877 chinook, 80,118 summer chum, 57,125 fall chum, and 10,504 coho salmon (Table 12 and Appendix A.5-A.8). This estimate includes salmon used by fishing and non-fishing households in the surveyed villages. Survey results indicate an estimated total of 174 chinook, 335 summer chum and one fall chum salmon were retained from commercial harvests and used for subsistence purposes (Table 13). In most years since 1987, Subdistrict 4-A has had a relatively high contribution of salmon retained from commercial harvests that were made available for subsistence use. However, due to the lack of a commercial fishery in 1999, no salmon were available for subsistence use from the Subdistrict 4-A roe fishery. Additionally, a limited fall season commercial fishery was responsible for only one fall chum being retained from this source.

The survey estimated 1,576 households, or approximately 63 percent of the total households, owned dogs (Table 14). Within the surveyed villages it was estimated that there were 4,818 dogs. Among the households that owned dogs, 216 were estimated to feed whole salmon to dogs. An estimated 22,302 summer chum, 39,527 fall chum, and 6,899 coho salmon were retained for dog food from both subsistence and commercial-related salmon harvests in the surveyed communities (Table 15). The responses to the question concerning the harvesting of chinook or “jack” salmon for dog food is reported as an unexpanded number because of the sensitivity of the subject may have effected individual’s reporting of the practice. Nine households from the surveyed communities of Beaver, Marshall, Ruby, and Tanana responded that they put up a total of 204 chinook salmon for dog food in 1999. Additionally, 16 households from the communities of Beaver, Galena, Grayling, Kotlik, Tanana, and Venetie responded that they had fed chinook salmon to dogs in the past.

A total of 385 households surveyed reported they did not meet their subsistence salmon needs in 1999 (Table 16). Approximately 18 percent of the surveyed households that indicated they had not met their needs responded it was due to the poor returns of salmon during the 1999 fishing season. Table 16 provides a summary of the comments by district or by drainage. The percent of comments by category were evenly distributed throughout the drainage. The highest category contained miscellaneous reasons, which includes “no reason given”. Categorical responses of households that did not meet their subsistence salmon needs since 1992, including a seven-year average, are summarized in Appendix B.9.

Survey households that fished were asked to approximate the numbers of fish, by species that were lost to spoilage or wild animals in 1999. The 1999 results along with the information collected since 1996 is summarized in Appendix B.11. The 1999 results suggest that the majority (94%) of fish harvested but unutilized were summer chum salmon. Additionally, the results indicate that the

majority of unutilized salmon were lost to scavenging bears. The numbers of salmon lost to spoilage and disease ranked the second highest, but accounted for a small percentage of the total unutilized fish. It is interesting to note that the reported incidence of diseased fish increased substantially from 1996 to a peak in 1998 with a noticeable decrease in 1999. The number of salmon reported lost to spoilage follows this same trend. Both weather conditions and infection may be included in the spoilage category.

### ***Subsistence Permits***

A total of 482 subsistence household permits were issued in 1999 (Table 17). Thirty-nine households obtained two permits in order to fish in two different permit areas. Separate permits are required for the taking of salmon on the Yukon or Tanana Rivers and for the subsistence harvest of northern pike in the Tolovana River drainage. Most of the two-permit fishing households were individuals from the village of Minto who held separate household permits for both salmon and Tolovana River drainage northern pike. Prior to the salmon fishing season, department representatives traveled to 11 interior villages and issued 157 subsistence permits. The remainder of the permits were issued either by mail or in person from department offices in Fairbanks, Delta Junction, and Tok.

As of March 31, 2000, a total of 362 responses for individual permits (97 percent) were received providing subsistence harvest information. Households reported their subsistence harvest by either returning the expired permit, responding to harvest information requests in the reminder letters, or verbally by telephone or in person. Including Stevens Village subsistence permit harvests, a total of 7,012 chinook, 3,756 summer chum, 30,513 fall chum, and 9,549 coho salmon were reported by subsistence permit holders in 1999 (Table 17). These harvest totals may be adjusted in future reports if the department receives information from the remaining 13 permits. Table 18 contains permit harvest information, organized by the fishery, permittee's community of residence, and drainage. A total of 216 household permits were utilized in areas requiring subsistence permits. Excluding four Stevens Village households that fished in the permit required area, 212 permits were used to participate in subsistence fisheries and the fishermen indicated operating the following primary gear types: 154 set gillnets (73%), 47 fish wheels (22%), and 11 other gear types or 5 percent (Table 1, other gear types not listed). Historic subsistence permit harvest information for salmon is summarized in Appendices B.5 and B.6.

Based on information provided on subsistence permits, 254 households reported owning a total of 2,086 dogs. Of households with dogs, 146 households indicated they fed whole salmon to the dogs. In 1999, subsistence permitted fishermen reported harvesting 24,269 salmon for the primary purpose of feeding dogs (Table 19). Although it is not required to report salmon put up for dogs by species on permits it is believed that chum salmon make up the majority of the fish fed to dogs. An estimate of the number of chinook salmon put up for dog food can be inferred by comparing the daily number of salmon listed as put up for dogs and the daily harvests recorded by species. An estimate of approximately 360 chinook salmon were put up for dog food in 1999 by ten households.

### ***Test Fisheries***

A total of 2,832 chinook, 4,534 summer chum, 12,579 fall chum and 2,410 coho salmon were provided to Yukon Area subsistence households from test fish projects in 1999 (Table 20). Residents in the communities of Emmonak, Kotlik, Kaltag, Marshall, Mountain Village, and Pilot Station were the primary recipients of the test fish. While most test fish projects documented any fish given away, operators of test fish wheels located near the villages of Tanana, Rampart, and Nenana reported salmon harvested from the projects as their own household harvest. Test fish given away to Yukon Area subsistence households that are not accounted for by either surveys or permit methods totaled 2,790 chinook, 4,534 summer chum, 6,520 fall chum, and 901 coho salmon (Table 20). The Toklat River test fish wheels released the fish alive, except for those that were sacrificed to remove coded-wire tag implants. Historical salmon harvests provided by Yukon Area test fish projects to local communities to meet subsistence needs from 1992 to 1999 are summarized in Appendix B.8.

### ***Personal Use Permits***

As of March 31, 2000 information was returned on the total 107 personal use household permits that were issued for the 1999 fishing season (Table 17). Four households obtained a personal use permit and also obtained a separate subsistence fishing permit. Permits were issued either through the mail or to individuals who applied for a permit in person at department offices in Fairbanks or Delta Junction. Households reported their personal use harvest by either returning the expired permit, responding to harvest information requests in the reminder letters, or verbally over the telephone or in person. A total harvest of 331 chinook, 382 summer chum, 262 fall chum, and 153 coho salmon were reported by personal use permit holders in 1999. The primary gear types utilized by the 69 households that indicated they fished in the personal use fishery are presented in Table 1, and include 65 set gillnets (94%) and 4 fish wheels (6%). Personal use permittees were not asked dog-related questions. Fish harvested under personal use regulations cannot be fed to dogs. In 1999, no salmon were reported as “taken but not sold” on fish tickets. Historical harvest information for the personal use salmon fishery is summarized in Appendix B.7.

## **DISCUSSION**

The 1999 Yukon Area subsistence harvest of chinook salmon was near the recent 1994 to 1998 five-year average (Figure 3). The 1999 summer chum salmon harvest was 27 percent below the most recent five-year average (Figure 4). The summer chum salmon average harvest for the preceding five-year period (1989 to 1993) was substantially greater and the difference is primarily attributed to changes in methodology of estimating the subsistence harvest that were initiated in 1988.

The 1999 subsistence harvest of fall chum salmon was 17 percent below the recent five-year (1994 to 1998) average (Figure 5). However, the recent five-year average includes harvest from 1994 and

1997, years in which regulatory restrictions were implemented that reduced fishing opportunities during the fall season subsistence fishery. The 1999 fall chum salmon harvest is approximately 37 percent below the 1989 to 1993 five-year average, which represent a period in which more typical harvests occurred. In the Upper Yukon Area, unlike summer chum salmon, fall chum salmon are typically sold in the round in the commercial fishery. Thus, in most years there is very little commercial-related by products available to meet subsistence needs during the fall season.

In years when the fall season fishery is restricted to reduce fall chum salmon harvest, the coho salmon harvests are also affected. Coho salmon have an overlapping but slightly later run timing than fall chum salmon. The 1999 coho salmon harvest was 27 percent below the recent five-year (1994 to 1998) average (Figure 6).

Pink salmon harvest information has been collected in surveyed communities in the Yukon Area since 1993 (Appendix B.10). Although pink salmon are only abundant in the Lower Yukon Area they are not typically sought after and harvests remain low.

### *Subsistence Surveys*

The sampling design and the associated questionnaire have changed periodically throughout the history of the program (Brannian and Gnath 1988; Holder and Hamner 1990; Holder and Hamner 1991; Bromaghin and Hamner 1993). However, since 1988, survey methods and the corresponding harvest estimates have been relatively comparable. Prior to 1988, commercial-related harvests retained for subsistence purposes were included in subsistence harvests estimates. Additionally, prior to 1979, surveys were conducted preceding completion of the fishing season and therefore they only partially documented the harvest of the later running fall chum and coho salmon.

A few communities within the Yukon Area, such as Arctic Village and Wiseman, are located in various tributary headwaters of Yukon River drainage and are not included in the survey program. These communities are located outside of the home range of most species of salmon. These communities often rely more on freshwater fish for the majority of their subsistence fish requirements. However, the community of Chevak is located within the Coastal District, and its residents are known to harvest both herring and salmon stocks through their association with other coastal communities. This community may need to be included in future surveys. As in the nearby community of Hooper Bay, which is included in the survey, a portion of the salmon harvested along the coast are bound for the Yukon River. Currently the extent of Chevak's harvest of Yukon River bound salmon is unknown.

Harvests also occur by households that do not reside within the Yukon Area but participate in the subsistence and or commercial fisheries and transport their salmon harvests out of the area. This harvest is currently not accounted for by the survey. Additionally, there are Yukon Area households excluded from either the survey or permit method of data collection. These households reside in areas monitored by permits, but they typically travel to and fish in non-permit areas covered by the subsistence survey program. Because of these concerns, it must be recognized that neither survey nor permit methods account for all subsistence harvests taken in the Yukon Area. In recent years,

attempts have been made to distribute subsistence survey calendars to these households when identified.

During the post season interviews, surveyors also attempt to contact “unknown” use households in order to classify them for inclusion in the database. The “unknown” use group often contains transient individuals who leave the communities during the summer months and generally never participate in the fishery. Methods for updating and maintaining an accurate sampling frame must continually be explored. Along with maintaining the sampling frame by identifying households, contact rates of the selected households are also crucial. To maintain high contact rates, several techniques have been implemented in recent years, including spending more time in the villages and increasing the effort to make contacts through the telephone and postal systems. Experience has shown that spending more time in the villages is the best practical method of increasing the number of contacts. Telephone contacts are constrained due to the limited availability of telephones in the villages and the reluctance of people to return messages even when they can call collect. Interview forms may be sent to households that cannot be personally interviewed or contacted by telephone, but usually this method has a low response rate and forms are often returned incomplete.

Species identification of the harvest is also a concern for the surveyors, because local names for species vary throughout the drainage. For example, fishermen in portions of the Upper Yukon Area use the term “chinook” to refer to coho salmon and “king” to refer to chinook salmon. The most effective technique found to reduce miss identification of a fisherman’s harvest is for surveyors to be familiar with the local, common names of the fish species.

Information on gear types has been collected throughout the history of the surveys; however, only since 1992 have the categories remained stable enough to allow a comparison. Based on the reported primary gear types used to harvest salmon in 1999, a noticeable increase in the proportion of subsistence fishermen using drift gillnets suggests there has been a change in fishing patterns. The historical average (1992 to 1998), of 1, 43, and 32 percent of fishermen were estimated to use drift gillnets to harvest salmon in the Coastal District, District 1, and District 4, of the Yukon Area respectively. In 1999, the subsistence fishing households utilizing drift gillnets were estimated to have increased to 36, 77, and 60 percent in these areas, respectively. Correspondingly, fishing households in the Coastal District and District 1 decreased their use of set gillnet gear, while fishing households in District 4 decreased their use of both set gillnet and fish wheel gear.

During the 1998 season, members of coastal communities observed that salmon were migrating farther offshore than in previous years. The increased use of drift gillnets to harvest salmon in the Coastal District in 1999 may be a result of subsistence fishermen altering their fishing patterns in anticipation of a reoccurrence of the 1998 migration route. At this time, the shift to drift gillnets by subsistence fishermen in the communities of District 1 is undetermined. In District 4, the shift from set gillnets and fish wheels to drift gillnets to harvest salmon for subsistence has been noted for the past three years, 1997, 1998, and 1999. During these years, the subsistence fishing households that used drift gillnets as their primary gear to harvest salmon was estimated to be 42, 46, and 60 percent, respectively. The shift in gear types in District 4 is primarily attributed to the following reasons: 1) the expansion of the drift gillnet area for the subsistence taking of chinook and fall chum salmon which was initiated by regulation in 1997; and 2) the lack of a commercial fishery in this

area in 1998 and 1999 resulting in decreased deployment of the stationary gear types normally operated by the commercial fishermen.

Fishermen who participate in the subsistence surveys are requested to estimate the number of commercial-related carcasses including both stripped females and whole males produced as a by-product of roe fisheries. In areas where flesh markets are predominant, whole salmon may also be taken home from commercial fishing periods to be used to supplement subsistence needs and are considered “taken but not sold”. Salmon from these sources are estimated and referred to as “retained from commercial” in this report. In years with commercial fishing activities for summer chum salmon, the majority of the harvest is taken in District 4. The recent average (1992 to 1998) commercial-related harvest reported by surveyed communities is approximately 115,000 summer chum salmon, 98 percent of which is generated in District 4. This includes 1998, a year in which commercial fishing for summer chum salmon was seriously curtailed due to poor returns. Again during the 1999 season, limited commercial fishing opportunity throughout the season severely reduced the amount of both summer and fall chum salmon available from this source (Tables 13 and 15).

The difficulty in retrieval of the subsistence salmon calendars is partially an artifact of the random selection of households to be interviewed in a given year. Surveyors do not attempt to make contact with all of the households in the larger communities. Although the calendars can be returned by postage-paid mail the individuals may not be using them or often leave them at fish camp. A partially completed historical database containing the calendar information (from both surveyed and non-surveyed households) has yet to be evaluated. Thus far it appears that the fishing households who have filled out calendars in the past are more likely to use this method annually. To increase response by return of calendars, effort would need to be directed at encouraging other fishermen to use the calendars on a regular basis. With increased use of calendars individuals being surveyed could reduce the error factor inherent in having to estimate harvest from memory.

Since 1992, subsistence surveys have attempted to document the portion of the subsistence salmon harvest that is used by a household or given away to another household. In efforts to not double count fish shared between households, the surveyor asked them to identify the household that gave the salmon to them. Beginning in 1993, households were also asked if they shared the salmon catch with another household. Understandably, naming the sources of shared harvests is difficult, but the responses to these questions provide the department with some estimate of the amount shared between households. Sharing salmon harvested is a very common practice in rural Yukon Area communities however it is difficult to quantify (Appendix A.9-A.10). The information gathered from these questions also assist the department in ensuring that each fishing household is placed in the proper harvest stratum, which is based on the amount of salmon caught and not the amount used.

The program also monitors the annual number of dogs in the Yukon Area. Fluctuations in the number of dogs and the corresponding number of salmon necessary for dog food may contribute to increases or decreases in salmon harvests. Appendix B. 13 summarizes the information collected by the program since 1990. Prior to 1992, only surveyed subsistence fishing households were asked dog-related information. Beginning in 1992, all subsistence surveyed and permit households, whether they fished or not, were asked how many dogs they owned and the number of whole

salmon fed to the dogs. Dog-related questions are not asked of personal use fishing households since personal use salmon cannot legally be fed to dogs. Subdistrict 6-C operated under subsistence fishing regulations in 1990, 1991, and 1994. In all other years since 1990, Subdistrict 6-C operated under personal use regulations. District 6 subtotals include Subdistrict 6-C permits, which in some years were issued under subsistence regulations and other years under personal use regulations. Therefore comparing District 6 dog information between years is more difficult. Taking into account the fluctuations between subsistence and personal use fisheries, the number of dogs in the Yukon Area appears to have remained relatively stable, except for 1994 and 1998 when a slight decrease in the number of dogs was documented. Comments collected during subsistence surveys indicated that the numbers of dogs kept were reduced following the poor salmon returns in 1993 and 1997.

In an attempt to explore the various factors that affect the fishing opportunity along the Yukon River drainage the department began inquiring in 1992 whether subsistence salmon needs were being met. These questions have revealed that even in years of relatively good salmon returns, based on escapement, up to approximately 30 percent of the households will state that their needs were not met. However in years of extremely poor returns, as expected, the responses of those households who had not met their needs increases substantially to as high as 61 percent in 1998 (Appendix B.9).

Follow up questions were asked to explore the reasons why needs were not being met. By asking the question to all households including households who didn't fish in a particular season the responses have provided a wide range of aspects that are difficult to quantify. However, this question provides insight and documentation of important factors affecting subsistence fishing opportunity and may include the following: environmental conditions such as high water or inclement weather that may affect both the act of fishing and ability of preserving the salmon harvested, not enough fish caught due to poor returns of fish and/or subsequent fishing restrictions, no helper to aid in the processing of more fish, and still fishing at the time of the survey. The information collected has provided a fair record of special conditions that have affected salmon harvests in the Yukon River drainage, for example the early freeze up in 1992, the flood of 1994, and the years of poor salmon returns. The surveys are conducted immediately following the salmon fishing season and the answers could be heavily influenced by the recent fall season fishing activities although particularly memorable events such as the early chinook salmon migration in 1996 and its affect on the important harvests of this species were also documented. In future surveys the question may be redirected to focus on what specific factors did the fishing households believe impacted their harvests of salmon by species in a given year. Collecting this information will document the fishermen's assessment of salmon runs to the Yukon River.

### ***Test Fisheries***

Each Yukon Area test fishing project has different methods for documenting subsistence harvests. To avoid double counting of salmon, care must be taken when documenting test fish given away to supplement subsistence harvests. The department attempts to coordinate, with the project operators, the most appropriate method to collect information regarding test fish disposition. The method used for projects that provide fish to a nearby community within the surveyed area is to have project



operators document the number of salmon given away as part of their daily routine. Complications arise within areas where the contracted operator is also supplying his own needs or needs of others, with an additional challenge presented in those areas that also require permits. Surveyors are instructed as to which communities were provided fish from nearby test fish projects each season. Surveyed households are asked how many fish they received from such projects. When analyzing the test fishery harvests, considerations must be made from two sources: the harvest information provided from the agency/organization operated project and the number of fish received from a project by a surveyed household.

### ***Subsistence and Personal Use Permits***

Distribution of subsistence and personal use permits has been augmented by spring permit issuing trips, conducted annually by department personnel primarily in rural areas, as well as the availability of permits through the mail or at department offices in Fairbanks, Tok, and Delta Junction. In order to improve the weekly harvest reports required from subsistence fishermen in that portion of Subdistrict 6-B and from personal use fishermen in Subdistrict 6-C, the department has applied additional effort towards initiating contact with fishermen known to operate in the area. The weekly harvest reports in these areas are necessary for inseason management of the Tanana River terminal fishery.

### ***Other Fishery Related Issues***

The variability of water levels from year to year and within the season can greatly affect harvests. During high water events, debris moving downstream results in decreased fishing opportunities or efficiency of gear, as well as increasing the occurrence of lost or destroyed gear. However, it has been observed that high levels of harvest can occur during high water events in fishing sites that remain relatively drift free, possibly due to the velocity of water forcing the fish to the banks. During extreme water levels, both high and low, the loss of fishing sites becomes an important factor in the fishermen's opportunities to harvest salmon. The department monitors the water level in select locations by comparing the current year's water level with historical water levels (Appendix A.11). Due, in part, to minimal snowfalls during the previous winter, record low water levels were observed during early June in 1999. Water levels reached average levels during late June to early July and again in August, while the remainder of the season they remained below average. The Salcha River, a tributary of the Tanana River, is usually significantly affected by spring run off and rainstorm events. However in 1999, the Salcha River water level remained well below average throughout the season, barely surpassing average during three rainstorm events in August. Water levels on the Tanana River are largely a function of spring run off and glacial melt within the drainage, although it is also affected by rainstorm events in its tributaries. In 1999, the Tanana River water level remained below average during July and September, and peaked in August due to run off from the various tributaries affected by rainstorms.

During the 1999 surveys, many fishermen commented that the salmon harvested were of better quality than in the previous season. In 1998, chinook salmon, in particular, were noted to have large heads and thin bodies, and higher percentages of fish had noticeable external and internal sores,

many of which are thought to have been caused by an infection of *Ichthyophonus hoferi*. In 1998 and 1999, surveys documented that salmon in poor condition, including chinook salmon, were fed to dogs because they were unfit for human consumption. Chinook salmon are highly prized for human consumption in the Yukon Area. It is conceivable that in these years additional harvests of chinook salmon were required to make up for the inedible portion of the chinook salmon harvested. These factors may have contributed to an average harvest of chinook salmon, although the overall run abundance was considered to be poor in those years.

Although the subsistence survey program is designed to estimate the number of salmon harvested, it also is the primary source of information on Yukon Area subsistence harvests of miscellaneous non-salmon species. Harvest numbers for selected miscellaneous non-salmon species have been collected from surveyed areas consistently since 1993. Harvest information is collected on the following species: whitefish, northern pike, sheefish, suckers, burbot (*Lota lota*), arctic lamprey (*Lamptera japonica*), “tomcod” (saffron cod) (*Eleginus gracilis*), arctic grayling (*Thymallus arcticus*), char (*Salvelinus* spp.), and blackfish (*Dallia pectoralis*). Selected miscellaneous non-salmon harvest information has also been consistently collected from permit areas since 1988, but the information is not presented in this report beyond 1993 in order to correspond with the historical survey data presented in Appendix B.12. In 1995, the survey began attempting to distinguish between large and small whitefish.

Although harvests of non-salmon species from Yukon Area subsistence and personal use fisheries are included in this report, the estimates may be imprecise as the stratification system is based on historical salmon harvests. The correspondence between the level of salmon harvest and the level of non-salmon harvest has not yet been studied. Stratification systems and sampling designs that might result in improved estimates for non-salmon species would need to be identified and developed. Several additional concerns are documented in previous reports that should be considered before utilizing the non-salmon harvest information (Borba and Hamner 1998).

## LITERATURE CITED

- ADF&G (Alaska Department of Fish and Game). 1985. Annual management report 1985 Yukon Area, Division of Commercial Fisheries, (Region III, unpublished report), Anchorage.
- ADF&G (Alaska Department of Fish and Game). 1999. Annual management report Yukon Area, 1998, Division of Commercial Fisheries, Regional Information Report 3A99-26, Anchorage.
- Allen, Henry T. 1887. Report of an Expedition to the Copper, Tanana, and Koyukuk Rivers, in the Territory of Alaska, in the year 1885. Washington, D.C.
- Borba, B. M. and H. H. Hamner. 1998. Subsistence and personal use salmon harvest estimates, Yukon Area, 1997. Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, Regional Information Report 3A98-23, Anchorage.
- Brannian L. K. and D. G. Gnath. 1988. Subsistence harvest of Pacific salmon in the Yukon River drainage, Alaska, 1986 with a historical review. Alaska Department of Fish and Game, Division of Commercial Fisheries, Fishery Research Bulletin 88-03, Juneau.
- Bromaghin J. F. and H. H. Hamner. 1993. Estimates of subsistence salmon harvests within the Yukon River drainage in 1991. Alaska Department of Fish and Game, Division of Commercial Fisheries, Technical Fishery Report 93-06, Juneau.
- Cochran, W. G. 1977. Sampling techniques, 3rd edition. John Wiley and Sons, New York.
- Gilbert, C. H. and H. O'Malley. 1921. Investigation of the salmon fisheries of the Yukon River. In Alaska Fishery and Fur-Seal Industries in 1920. Bureau of Fisheries Document 909, Government Printing Office, Washington D.C.
- Holder, R. R. and H. H. Hamner. 1990. Preliminary estimates of subsistence salmon harvest in the Yukon River drainage, 1989. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 3F90-22, Anchorage.
- Holder, R. R. and H. H. Hamner. 1991. Preliminary estimates of subsistence salmon harvest in the Yukon River drainage, 1990. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 3F91-20, Anchorage.
- Kerkvliet, C. M. 1986. 1986 Hooper Bay salmon tagging study. Bering Sea Fishermen's Association, Anchorage, Alaska.
- Richardson, W. P. [1900] 1964. Yukon River Exploring Expedition: winter conditions along the Yukon, 1899. Extracted from 56th Congress, 1st Session, Senate Report 1023, Washington, D.C.

### **LITERATURE CITED (CONTINUED)**

- Walker, R. J., E. Andrews, D. Andersen, and N. Shishido. 1989. Subsistence harvest of Pacific salmon in the Yukon River drainage, Alaska, 1977-1988. Alaska Department of Fish and Game, Division of Subsistence, Technical Paper 187, Juneau.
- Williams, J. Gregory. 1999. Alaska Population Overview 1998 Estimates. Alaska Department of Labor, Research and Analysis Section, Juneau.
- White, S. M. 1991. Use of subsistence and personal use salmon as dog food, State of Alaska Memorandum, Juneau.
- Zagoskin, Lavrenti A. [1847] 1967. Lieutenant Zagoskin's travels in Russian America, 1842-44. Arctic Institute of North America, Anthropology of the North: Translations from Russian Sources, No. 7, University of Toronto Press, Toronto, Ontario, Canada.

Table 1. Subsistence and personal use salmon harvest estimates which include test fish harvests given away for subsistence use, and related information, Yukon Area, 1999.

Community a	Survey Date or Permit Village	Fishing Households b	Dogs	Estimated Harvest				Primary Gear Used		
				Chinook	Summer Chum	Fall Chum	Coho	Set Nets	Drift Nets	Fish Wheels
Hooper Bay	9/13-9/14	66	181	173	10,146	0	68	27	39	0
Scammon Bay	9/13	41	95	938	3,315	204	0	41	0	0
<b>Coastal District Total c</b>		107	276	1,111	13,461	204	68	68	39	0
Sheldon Point	9/9-9/10	21	56	855	1,343	115	51	1	20	0
Alakanuk	9/8-9/9	58	88	1,236	3,808	558	108	0	58	0
Emmonak d	9/7-9/9, 9/11-9/13	80	166	3,337	10,310	1,849	525	23	57	0
Kotlik f	9/9-9/10	52	141	1,420	4,708	3,980	1,046	25	27	0
<b>District 1 Subtotal</b>		211	451	6,848	20,169	6,502	1,730	49	162	0
Mountain Village g	9/16	113	216	2,162	10,059	1,968	665	11	102	0
Pitkas Point	9/17, 9/19	20	64	632	849	53	302	2	18	0
St. Marys	9/15-9/17, 9/19	57	162	2,150	6,752	722	536	0	57	0
Pilot Station h	9/20	47	169	2,715	5,265	1,155	249	2	43	2
Marshall j	9/21	39	371	2,780	1,212	696	1,041	10	29	0
<b>District 2 Subtotal</b>		276	982	10,439	24,137	4,594	2,793	25	249	2
Russian Mission	9/22	38	175	2,722	616	100	542	29	9	0
Holy Cross	9/20	44	94	4,581	264	239	62	2	42	0
Shageluk	9/23	20	105	412	4,868	76	6	20	0	0
<b>District 3 Subtotal</b>		102	374	7,715	5,748	415	610	51	51	0
<b>Lower Yukon River Total</b>		589	1,807	25,002	50,054	11,511	5,133	125	462	2
Anvik	9/21-9/22	13	113	776	848	126	282	2	11	0
Grayling	9/22-9/23	44	108	2,476	4,126	1,370	201	2	40	2
Kaltag k	9/28-9/29	34	96	2,051	625	764	333	0	34	0
Nulato	9/29	37	262	1,799	1,945	2,338	170	8	29	0
Koyukuk	9/30	19	114	506	197	1,544	295	6	11	2
Galena	9/28-9/29	51	228	2,539	1,688	1,932	123	22	19	10
Ruby	10/1-10/2	9	218	777	1,697	907	620	4	0	5
<b>District 4 Yukon River Subtotal</b>		207	1,139	10,924	11,126	8,981	2,024	44	144	19
Huslia	9/30	15	124	90	1,192	89	15	12	3	0
Hughes	10/1	10	72	105	577	84	10	10	0	0
Allakaket	10/5-10/6	6	116	108	2,245	20	0	6	0	0
Alatna	10/6	4	6	10	99	0	0	4	0	0
Bettles	10/6-10/7	1	45	1	100	0	0	1	0	0
<b>Koyukuk River Subtotal</b>		36	363	314	4,213	193	25	33	3	0
<b>District 4 Subtotal</b>		243	1,502	11,238	15,339	9,174	2,049	77	147	19
Tanana	10/19-10/20	27	465	3,388	1,214	22,305	3,989	13	0	14
Rampart	10/11-10/12	12	34	2,018	60	4,324	126	10	0	2
Fairbanks NSB m	permits	40	307	851	346	681	0	36	0	4
Stevens Village n	11/4-11/5, permits	14	42	1,214	26	20	0	13	0	1
Birch Creek	10/15	3	13	24	0	0	0	3	0	0
Beaver	10/12-10/13	12	45	473	91	16	0	12	0	0
Fort Yukon	10/14-10/15	38	414	2,539	0	9,702	124	13	0	25
Circle	permits	6	86	524	60	2,722	0	2	0	4
Central	permits	6	35	91	0	0	0	6	0	0
Eagle	permits	50	255	2,558	271	11,292	0	39	0	11
Other p	permits	12	56	488	42	65	2	11	0	1
<b>District 5 Yukon River Subtotal</b>		220	1,752	14,168	2,110	51,127	4,241	158	0	62

-Continued-

Table 1. (page 2 of 2).

Community a	Survey Date or Permit Village	Fishing Households b	Dogs	Estimated Harvest				Primary Gear Used		
				Chinook	Summer Chum	Fall Chum	Coho	Set Nets	Drift Nets	Fish Wheels
Venetie	10/13-10/14	19	149	127	166	2,011	0	10	0	9
Chalkyitsik	10/11	8	71	35	0	442	0	8	0	0
<i>Chandalar/Black Rivers Subtotal</i>		27	220	162	166	2,453	0	18	0	9
<i>District 5 Subtotal</i>		247	1,972	14,330	2,276	53,580	4,241	176	0	71
Manley	permits	9	408	136	272	5,172	3,244	6	0	3
Minto r	permits	29	249	317	173	781	0	24	0	4
Nenana	permits	25	375	975	1,894	5,619	4,023	8	0	17
Healy	permits	4	142	1	0	2,267	1,259	2	0	2
Fairbanks NSB s	permits	88	94	526	697	1,892	1,021	75	0	5
Delta Junction	permits	0	2	0	0	0	0	0	0	0
Other t	permits	12	51	0	0	2	0	10	0	0
<i>District 6 Tanana River Subtotal</i>		167	1,321	1,955	3,036	15,733	9,547	125	0	31
<b>Upper Yukon River Total</b>		657	4,795	27,523	20,651	78,487	15,837	378	147	121
Survey Village Subtotals		1,072	4,818	44,379	75,877	53,189	10,588	352	648	72
Subsistence Permit Subtotals		212	2,060	6,136	3,373	30,231	9,396	154	0	47
Subsistence Test Fish Subtotals v		-	-	2,790	4,534	6,520	901	-	-	-
<i>Subsistence Harvests Subtotal</i>		1,284	6,878	53,305	83,784	89,940	20,885	506	648	119
Personal Use Permit Subtotals		69	-	331	382	262	153	65	0	4
<b>Alaska, Yukon River Total x</b>		1,246	6,602	52,525	70,705	89,998	20,970	503	609	123
<b>Alaska, Yukon Area Total</b>		1,353	6,878	53,636	84,166	90,202	21,038	571	648	123

a Data collected by Alaska Department of Fish and Game (ADF&G), Division of Commercial Fisheries. Survey data is expanded for number of fishing households, number of dogs, and harvest. Permit data is unexpanded. The number of dogs is based on information obtained from permits issued, while the number of fishing households and their harvest is based on returned permits. Gear data represents the primary gear types used by fishing households. Of the 482 permits issued, 39 households obtained permits for more than one location.

b Estimated number of households that fished in surveyed communities or number of permit households who reported fishing in permit required areas.

c A 1986 Hooper Bay salmon tagging study conducted by the Bering Sea Fishermen's Association (BSFA) suggested that harvests in the Nuok Spit area of Hooper Bay intercepted Yukon River and Norton Sound chum salmon stocks.

d Includes 1,165 chinook, 2,116 summer chum, 1,563 fall chum, and 138 coho salmon from ADF&G test fish catches.

f Includes 491 chinook, 601 summer chum, 2,498 fall chum, and 511 coho salmon from ADF&G test fish catches.

g Includes 1 chinook, 1,008 fall chum and 2 coho salmon from BSFA test fish catches.

h Includes 359 chinook, 1,636 summer chum, 968 fall chum, and 180 coho salmon from ADF&G test fish catches.

j Includes 773 chinook and 181 summer chum salmon from ADF&G test fish catches.

k Includes 1 chinook, 483 fall chum and 70 coho salmon from City of Kaltag test fish catches.

m Fairbanks North Star Borough (Fairbanks NSB) households that obtained a permit and indicated they fished in a Yukon River permit required area.

n Permit harvest information from Stevens Village residents was used to compliment the information obtained by the survey.

p Other includes residents of Anchorage, Manley, Nenana, Minto and the Upper Tanana River drainage villages of Northway and Tok, who obtained a household permit and fished in a Yukon River permit required area.

r Number of fishing households includes 15 Tolovana River pike permits that were fished.

s Fairbanks North Star Borough (Fairbanks NSB) households that obtained a permit and indicated they fished in the Tanana River permit required area. The number of fishing households includes 9 Tolovana River pike permits that were fished.

t Other includes residents of Gakona, Slana, and the Upper Tanana River drainage villages of Northway, Tanacross, and Tok who fished in the Tanana River.

v Test fish given away for subsistence use.

x Yukon River Total does not include Coastal District.

Table 2 Estimated total number of households, the sample size, the number contacted, and the percentage of the sampled households that were contacted in surveyed villages, by harvest stratum, with villages and district totals, Yukon Area, 1999. a

Community	Unknown				Does Not Harvest Salmon				Light Harvester				Medium Harvester				Heavy Harvester				Community Totals			
	N	n	C	%C	N	n	C	%C	N	n	C	%C	N	n	C	%C	N	n	C	%C	N	n	C	%C
Hooper Bay	3	3	3	100	82	8	7	87.5	89	27	26	96.2	17	17	17	100	3	3	3	100	194	58	56	96.5
Scammon Bay	0	0	0	-	23	5	3	60	51	15	15	100	2	2	2	100	0	0	0	-	76	22	20	90.9
Coastal District	3	3	3	100	105	13	10	76.9	140	42	41	97.6	19	19	19	100	3	3	3	100	270	80	76	95
Sheldon's Point	0	0	0	-	7	7	7	100	21	21	17	80.9	7	7	7	100	0	0	0	-	35	35	31	88.5
Alakanuk	7	7	6	85.7	38	5	5	100	72	22	21	95.4	11	11	11	100	0	0	0	-	128	45	43	95.5
Emmonak	0	0	0	-	64	19	19	100	77	39	35	89.7	15	15	14	93.3	1	1	1	100	157	74	69	93.2
Kotlik	0	0	0	-	27	5	5	100	51	15	14	93.3	10	10	10	100	2	2	2	100	90	32	31	96.8
District 1	7	7	6	85.7	136	36	36	100	221	97	87	89.6	43	43	42	97.6	3	3	3	100	410	186	174	93.5
Mountain Village	0	0	0	-	41	5	5	100	90	27	26	96.2	19	19	17	89.4	1	1	1	100	151	52	49	94.2
Pitkas Point	1	1	1	100	4	4	4	100	15	15	15	100	6	6	6	100	0	0	0	-	26	26	26	100
St. Mary's	0	0	0	-	45	5	4	80	56	17	16	94.1	14	14	14	100	3	3	3	100	118	39	37	94.8
Pilot Station	1	1	0	0	35	11	9	81.8	55	28	28	100	4	4	3	75	0	0	0	-	95	44	40	90.9
Marshall	5	5	5	100	16	5	4	80	39	12	12	100	8	8	8	100	0	0	0	-	68	30	29	96.6
District 2	7	7	6	85.7	141	30	26	86.6	255	99	97	97.9	51	51	48	94.1	4	4	4	100	458	191	181	94.7
Russian Mission	0	0	0	-	25	5	4	80	25	8	7	87.5	5	5	4	80	2	2	2	100	57	20	17	85
Holy Cross	0	0	0	-	19	5	5	100	40	20	20	100	7	7	7	100	0	0	0	-	66	32	32	100
Shageluk	0	0	0	-	9	9	7	77.7	10	10	9	90	7	7	7	100	6	6	6	100	32	32	29	90.6
District 3	0	0	0	-	53	19	16	84.2	75	38	36	94.7	19	19	18	94.7	8	8	8	100	155	84	78	92.8
Anvik	0	0	0	-	18	18	15	83.3	17	17	15	88.2	4	4	4	100	1	1	1	100	40	40	35	87.5
Grayling	1	1	1	100	14	5	4	80	20	6	6	100	16	16	16	100	0	0	0	-	51	28	27	96.4
Kallag	2	2	2	100	10	5	4	80	39	12	11	91.6	5	5	5	100	1	1	1	100	57	25	23	92
Nulato	4	4	3	75	46	5	5	100	40	12	12	100	9	9	9	100	1	1	1	100	100	31	30	96.7
Koyukuk	0	0	0	-	21	21	19	90.4	12	12	12	100	3	3	2	66.6	2	2	2	100	38	38	35	92.1
Galena	1	1	1	100	107	11	10	90.9	62	19	16	84.2	10	10	10	100	3	3	3	100	183	44	40	90.9
Ruby	3	3	2	66.6	47	5	5	100	15	5	5	100	3	3	2	66.6	5	5	5	100	73	21	19	90.4
Huslia	1	1	0	0	57	6	6	100	20	6	6	100	5	5	4	80	1	1	1	100	84	19	17	89.4
Hughes	0	0	0	-	11	11	8	72.7	10	10	8	80	2	2	2	100	1	1	1	100	24	24	19	79.1
Atkasook	2	2	2	100	28	5	5	100	16	5	5	100	5	5	5	100	3	3	3	100	54	20	20	100
Alatna	0	0	0	-	8	8	5	62.5	3	3	3	100	1	1	1	100	0	0	0	-	12	12	9	75
Bettles	0	0	0	-	15	15	14	93.3	4	4	3	75	1	1	1	100	0	0	0	-	20	20	18	90
District 4	14	14	11	78.5	382	115	100	86.9	258	111	102	91.8	64	64	61	95.3	18	18	18	100	736	322	292	90.6
Tanana	1	1	1	100	74	22	19	86.3	26	13	11	84.6	8	8	7	87.5	13	13	10	84.6	122	57	49	85.9
Rampart	0	0	0	-	11	11	9	81.8	3	3	2	66.6	14	14	14	100	1	1	0	0	29	29	25	86.2
Stevens Village	0	0	0	-	13	13	8	61.5	10	10	6	60	6	6	5	83.3	2	2	2	100	31	31	21	67.7
Birch Creek	0	0	0	-	9	9	9	100	5	5	5	100	0	0	0	-	0	0	0	-	14	14	14	100
Beaver	0	0	0	-	12	12	10	83.3	13	13	12	92.3	7	7	5	71.4	0	0	0	-	32	32	27	84.3
Fort Yukon	0	0	0	-	110	11	9	81.8	42	13	10	76.9	20	20	18	90	1	1	1	100	173	45	38	84.4
Venette	0	0	0	-	38	5	5	100	8	5	3	60	5	5	4	80	3	3	3	100	54	18	15	83.3
Chalkyitsik	0	0	0	-	29	29	29	100	2	2	2	100	4	4	3	75	0	0	0	-	35	35	34	97.1
District 5	1	1	1	100	296	112	98	87.5	109	64	51	79.6	64	64	56	87.5	20	20	17	85	490	261	223	85.4
Survey Totals	32	32	27	84.4	1,113	325	286	88	1,058	451	414	91.8	260	260	244	93.8	56	56	53	94.6	2,519	1,124	1,024	91.1

a Total number of households (N), the sample size (n), the number of households contacted (C), and the percent of the sampled households that were contacted (%C). Dashes indicate indefinable values.

Table 3. Estimated number of people in households in surveyed villages, by harvest stratum, with village and district totals, Yukon Area, 1999 a

Community	Unknown				Does Not Harvest Salmon				Light Harvester				Medium Harvester				Heavy Harvester				Combined			
																					Total		Est CI(95%)	
	N	n	Mean	SE	N	n	Mean	SE	N	n	Mean	SE	N	n	Mean	SE	N	n	Mean	SE	N	n	Total	(+/-)
Hooper Bay	3	3	3.7	0.0	82	7	5.0	0.4	89	26	5.3	0.4	17	17	6.8	0.0	3	3	5.7	0.0	194	56	1,033	90
Scammon Bay	0	0	-	-	23	3	3.7	0.6	51	15	6.0	0.7	2	2	5.0	0.0	0	0	-	-	76	20	404	80
<b>Coastal District</b>	<b>3</b>	<b>3</b>	<b>3.7</b>	<b>0.0</b>	<b>105</b>	<b>10</b>	<b>4.7</b>	<b>0.3</b>	<b>140</b>	<b>41</b>	<b>5.6</b>	<b>0.3</b>	<b>19</b>	<b>19</b>	<b>6.6</b>	<b>0.0</b>	<b>3</b>	<b>3</b>	<b>5.7</b>	<b>0.0</b>	<b>270</b>	<b>76</b>	<b>1,437</b>	<b>121</b>
Sheldon's Point	0	0	-	-	7	6	3.8	0.4	21	17	6.0	0.2	7	7	5.3	0.0	0	0	-	-	35	30	190	10
Alakanuk	7	6	5.3	0.4	38	5	3.0	0.7	72	21	3.9	0.3	11	11	5.8	0.0	0	0	-	-	128	43	500	73
Emmonak	0	0	-	-	64	19	4.7	0.5	77	35	4.6	0.2	15	14	3.8	0.2	1	1	1.0	0.0	157	69	712	73
Kotlik	0	0	-	-	27	5	5.2	1.0	51	14	6.2	0.4	10	10	6.1	0.0	2	2	3.5	0.0	90	31	525	68
<b>District 1</b>	<b>7</b>	<b>6</b>	<b>5.3</b>	<b>0.4</b>	<b>136</b>	<b>35</b>	<b>4.3</b>	<b>0.4</b>	<b>221</b>	<b>87</b>	<b>4.9</b>	<b>0.1</b>	<b>43</b>	<b>42</b>	<b>5.1</b>	<b>0.1</b>	<b>3</b>	<b>3</b>	<b>2.7</b>	<b>0.0</b>	<b>410</b>	<b>173</b>	<b>1,927</b>	<b>124</b>
Mountain Village	0	0	-	-	41	5	3.4	1.0	90	26	5.6	0.5	19	17	5.4	0.2	1	1	6.0	0.0	151	49	759	127
Pitkas Point	1	1	5.0	0.0	4	4	3.0	0.0	15	15	4.4	0.0	6	6	6.2	0.0	0	0	-	-	26	26	120	0
St. Mary's	0	0	-	-	45	4	1.5	0.3	56	16	4.5	0.3	14	14	5.1	0.0	3	3	6.0	0.0	118	37	409	47
Pilot Station	1	0	-	-	35	9	3.2	0.6	55	28	6.0	0.3	4	3	6.7	0.3	0	0	-	-	95	40	473	56
Marshall	5	5	4.2	0.0	16	4	3.5	0.8	39	12	4.9	0.6	8	8	3.5	0.0	0	0	-	-	68	29	297	55
<b>District 2</b>	<b>7</b>	<b>6</b>	<b>3.7</b>	<b>0.0</b>	<b>141</b>	<b>26</b>	<b>2.7</b>	<b>0.3</b>	<b>255</b>	<b>97</b>	<b>5.3</b>	<b>0.2</b>	<b>51</b>	<b>48</b>	<b>5.2</b>	<b>0.1</b>	<b>4</b>	<b>4</b>	<b>6.0</b>	<b>0.0</b>	<b>458</b>	<b>181</b>	<b>2,058</b>	<b>157</b>
Russian Mission	0	0	-	-	25	4	4.8	0.7	25	7	5.7	0.9	5	4	4.8	0.2	2	1	7.0	-	57	16	299	56
Holy Cross	0	0	-	-	19	5	3.8	0.9	40	20	3.0	0.2	7	7	5.0	0.0	0	0	-	-	66	32	227	39
Shageluk	0	0	-	-	9	7	2.9	0.4	10	9	3.4	0.2	7	7	2.4	0.0	6	6	4.2	0.0	32	29	102	8
<b>District 3</b>	<b>0</b>	<b>0</b>	<b>-</b>	<b>-</b>	<b>53</b>	<b>16</b>	<b>4.1</b>	<b>0.5</b>	<b>75</b>	<b>36</b>	<b>4.0</b>	<b>0.3</b>	<b>19</b>	<b>18</b>	<b>4.0</b>	<b>0.1</b>	<b>8</b>	<b>7</b>	<b>4.9</b>	<b>0.0</b>	<b>155</b>	<b>77</b>	<b>628</b>	<b>69</b>
Anvik	0	0	-	-	18	15	2.1	0.2	17	15	3.4	0.1	4	4	4.5	0.0	1	1	6.0	0.0	40	35	120	8
Grayling	1	1	3.0	0.0	14	4	2.0	0.6	20	6	3.6	0.8	16	16	4.4	0.0	0	0	-	-	51	27	174	36
Kaltag	2	2	3.0	0.0	10	4	5.0	0.7	39	11	4.0	0.4	5	5	6.4	0.0	1	1	4.0	0.0	57	23	252	34
Nulato	4	3	1.7	0.2	46	5	1.8	0.8	40	12	4.0	0.3	9	9	4.6	0.0	1	1	5.0	0.0	100	30	295	74
Koyukuk	0	0	-	-	21	18	1.5	0.1	12	12	3.5	0.0	3	2	3.0	0.6	2	2	3.5	0.0	38	34	90	5
Galena	1	1	4.0	0.0	107	10	2.8	0.4	62	16	3.0	0.3	10	10	3.8	0.0	3	3	1.3	0.0	183	40	535	86
Ruby	3	2	2.0	0.0	47	5	3.2	1.1	15	5	3.2	0.9	3	2	1.5	0.3	5	5	3.6	0.0	73	19	227	105
Huslia	1	0	-	-	57	6	2.8	0.6	20	6	3.8	0.4	5	4	5.8	0.7	1	1	5.0	0.0	84	17	272	71
Hughes	0	0	-	-	11	8	2.1	0.3	10	8	3.1	0.3	2	2	5.0	0.0	1	1	3.0	0.0	24	19	68	9
Allakaket	2	2	2.5	0.0	28	5	2.6	0.7	16	5	3.4	0.6	5	5	4.8	0.0	3	3	5.0	0.0	54	20	171	45
Alatna	0	0	-	-	8	5	1.4	0.2	3	3	2.3	0.0	1	1	3.0	0.0	0	0	-	-	12	9	21	2
Bettles	0	0	-	-	15	14	2.0	0.1	4	3	2.0	0.5	1	1	3.0	0.0	0	0	-	-	20	18	41	4
<b>District 4</b>	<b>14</b>	<b>11</b>	<b>2.2</b>	<b>0.1</b>	<b>382</b>	<b>99</b>	<b>2.6</b>	<b>0.2</b>	<b>258</b>	<b>102</b>	<b>3.5</b>	<b>0.1</b>	<b>64</b>	<b>61</b>	<b>4.4</b>	<b>0.1</b>	<b>18</b>	<b>18</b>	<b>3.7</b>	<b>0.0</b>	<b>736</b>	<b>291</b>	<b>2,266</b>	<b>183</b>
Tanana	1	1	2.0	0.0	74	19	1.5	0.1	26	11	2.5	0.3	8	7	3.4	0.2	13	11	3.2	0.2	122	49	246	28
Rampart	0	0	-	-	11	9	1.6	0.1	3	2	3.5	1.4	14	14	3.6	0.0	1	0	-	-	29	25	78	9
Stevens Village	0	0	-	-	13	8	1.5	0.2	10	5	2.6	0.5	6	4	3.8	0.4	2	2	4.5	0.0	31	19	77	13
Birch Creek	0	0	-	-	9	9	2.2	0.0	5	5	2.2	0.0	0	0	-	-	0	0	-	-	14	14	31	0
Beaver	0	0	-	-	12	9	2.2	0.3	13	12	3.1	0.1	7	5	2.2	0.3	0	0	-	-	32	26	83	9
Fort Yukon	0	0	-	-	110	9	2.1	0.4	42	10	3.3	0.4	20	17	3.4	0.2	1	1	1.0	0.0	173	37	439	90
Venetie	0	0	-	-	38	5	4.0	1.0	8	3	2.6	0.9	5	4	2.5	0.1	3	3	3.7	0.0	54	15	197	77
Chalkyitsik	0	0	-	-	29	29	2.0	0.0	2	2	4.0	0.0	4	3	3.7	0.6	0	0	-	-	35	34	82	5
<b>District 5</b>	<b>1</b>	<b>1</b>	<b>2.0</b>	<b>0.0</b>	<b>296</b>	<b>97</b>	<b>2.1</b>	<b>0.2</b>	<b>109</b>	<b>50</b>	<b>3.0</b>	<b>0.2</b>	<b>64</b>	<b>54</b>	<b>3.3</b>	<b>0.1</b>	<b>20</b>	<b>17</b>	<b>3.1</b>	<b>0.0</b>	<b>490</b>	<b>219</b>	<b>1,233</b>	<b>124</b>
<b>Survey Totals</b>	<b>32</b>	<b>27</b>	<b>3.3</b>	<b>0.1</b>	<b>1,113</b>	<b>283</b>	<b>3.0</b>	<b>0.1</b>	<b>1,058</b>	<b>413</b>	<b>4.5</b>	<b>0.1</b>	<b>260</b>	<b>242</b>	<b>4.5</b>	<b>0.0</b>	<b>56</b>	<b>52</b>	<b>3.9</b>	<b>0.0</b>	<b>2,519</b>	<b>1,017</b>	<b>9,549</b>	<b>329</b>

a The total number of households (N), the number of households contacted (n), standard error (SE), and includes 95 percent confidence interval, CI (95%). Dashes indicate indefinable values.



Table 4. Estimated number of subsistence fishing households in surveyed villages, by harvest stratum, with village and district totals, Yukon Area, 1999 a

Community	Unknown				Does Not Harvest Salmon				Light Harvester				Medium Harvester				Heavy Harvester				Combined			
																					Total		Est	CI(95%)
	N	n	Mean	SE	N	n	Mean	SE	N	n	Mean	SE	N	n	Mean	SE	N	n	Mean	SE	N	n	Total	(+/-)
Hooper Bay	3	3	0.0	0.0	82	7	0.0	0.0	89	26	0.5	0.0	17	17	0.9	0.0	3	3	1.0	0.0	194	56	66	15
Scammon Bay	0	0	-	-	23	3	0.0	0.0	51	15	0.8	0.0	2	2	0.0	0.0	0	0	-	-	76	20	41	9
<b>Coastal District</b>	<b>3</b>	<b>3</b>	<b>0.0</b>	<b>0.0</b>	<b>105</b>	<b>10</b>	<b>0.0</b>	<b>0.0</b>	<b>140</b>	<b>41</b>	<b>0.6</b>	<b>0.0</b>	<b>19</b>	<b>19</b>	<b>0.8</b>	<b>0.0</b>	<b>3</b>	<b>3</b>	<b>1.0</b>	<b>0.0</b>	<b>270</b>	<b>76</b>	<b>107</b>	<b>17</b>
Sheldon's Point	0	0	-	-	7	7	0.3	0.0	21	17	0.6	0.0	7	7	0.7	0.0	0	0	-	-	35	31	21	2
Alakanuk	7	6	0.0	0.0	38	5	0.2	0.2	72	21	0.5	0.0	11	11	0.8	0.0	0	0	-	-	128	43	58	19
Emmonak	0	0	-	-	64	19	0.3	0.1	77	35	0.6	0.0	15	14	0.7	0.0	1	1	1.0	0.0	157	69	80	15
Kotlik	0	0	-	-	27	5	0.2	0.2	51	14	0.7	0.1	10	10	0.8	0.0	2	2	1.0	0.0	90	31	52	14
<b>District 1</b>	<b>7</b>	<b>6</b>	<b>0.0</b>	<b>0.0</b>	<b>136</b>	<b>36</b>	<b>0.3</b>	<b>0.1</b>	<b>221</b>	<b>87</b>	<b>0.6</b>	<b>0.0</b>	<b>43</b>	<b>42</b>	<b>0.8</b>	<b>0.0</b>	<b>3</b>	<b>3</b>	<b>1.0</b>	<b>0.0</b>	<b>410</b>	<b>174</b>	<b>211</b>	<b>28</b>
Mountain Village	0	0	-	-	41	5	0.4	0.2	90	26	0.8	0.0	19	17	0.8	0.0	1	1	1.0	0.0	151	49	113	21
Pitkas Point	1	1	1.0	0.0	4	4	0.0	0.0	15	15	0.8	0.0	6	6	1.0	0.0	0	0	-	-	26	26	20	0
St Mary's	0	0	-	-	45	4	0.0	0.0	56	16	0.7	0.0	14	14	0.9	0.0	3	3	1.0	0.0	118	37	57	10
Pilot Station	1	0	-	-	35	9	0.2	0.1	55	28	0.6	0.0	4	3	1.0	0.0	0	0	-	-	95	40	47	11
Marshall	5	5	0.6	0.0	16	4	0.5	0.3	39	12	0.5	0.1	8	8	1.0	0.0	0	0	-	-	68	29	39	12
<b>District 2</b>	<b>7</b>	<b>6</b>	<b>0.6</b>	<b>0.0</b>	<b>141</b>	<b>26</b>	<b>0.2</b>	<b>0.1</b>	<b>255</b>	<b>97</b>	<b>0.7</b>	<b>0.0</b>	<b>51</b>	<b>48</b>	<b>0.9</b>	<b>0.0</b>	<b>4</b>	<b>4</b>	<b>1.0</b>	<b>0.0</b>	<b>458</b>	<b>181</b>	<b>276</b>	<b>29</b>
Russian Mission	0	0	-	-	25	4	0.3	0.2	25	7	1.0	0.0	5	4	1.0	0.0	2	2	1.0	0.0	57	17	38	11
Holy Cross	0	0	-	-	19	5	0.6	0.2	40	20	0.7	0.0	7	7	0.7	0.0	0	0	-	-	66	32	44	10
Shageluk	0	0	-	-	9	7	0.4	0.1	10	9	0.5	0.0	7	7	0.7	0.0	6	6	1.0	0.0	32	29	20	2
<b>District 3</b>	<b>0</b>	<b>0</b>	<b>-</b>	<b>-</b>	<b>53</b>	<b>16</b>	<b>0.4</b>	<b>0.1</b>	<b>75</b>	<b>36</b>	<b>0.8</b>	<b>0.0</b>	<b>19</b>	<b>18</b>	<b>0.8</b>	<b>0.0</b>	<b>8</b>	<b>8</b>	<b>1.0</b>	<b>0.0</b>	<b>155</b>	<b>78</b>	<b>102</b>	<b>15</b>
Anvik	0	0	-	-	18	15	0.1	0.0	17	15	0.4	0.0	4	4	1.0	0.0	1	1	0.0	0.0	40	35	13	2
Grayling	1	1	0.0	0.0	14	4	0.8	0.2	20	6	1.0	0.0	16	16	0.8	0.0	0	0	-	-	51	27	44	6
Kaltag	2	2	1.0	0.0	10	4	0.5	0.2	39	11	0.5	0.1	5	5	1.0	0.0	1	1	1.0	0.0	57	23	34	11
Nulato	4	3	0.0	0.0	46	5	0.2	0.2	40	12	0.5	0.1	9	9	0.8	0.0	1	1	1.0	0.0	100	30	37	20
Koyukuk	0	0	-	-	21	19	0.4	0.0	12	12	0.5	0.0	3	2	1.0	0.0	2	2	1.0	0.0	38	35	19	1
Galena	1	1	1.0	0.0	107	10	0.1	0.1	62	16	0.4	0.1	10	10	1.0	0.0	3	3	0.7	0.0	183	40	51	24
Ruby	3	2	0.0	0.0	47	5	0.0	0.0	15	5	0.2	0.1	3	2	0.5	0.3	5	5	0.8	0.0	73	19	9	5
Huslia	1	0	-	-	57	6	0.0	0.0	20	6	0.6	0.1	5	4	0.3	0.1	1	1	0.0	0.0	84	17	15	7
Hughes	0	0	-	-	11	8	0.3	0.1	10	8	0.3	0.0	2	2	1.0	0.0	1	1	1.0	0.0	24	19	10	2
Allakaket	2	2	0.0	0.0	28	5	0.0	0.0	16	5	0.0	0.0	5	5	0.6	0.0	3	3	1.0	0.0	54	20	6	0
Alatna	0	0	-	-	8	5	0.2	0.1	3	3	0.3	0.0	1	1	1.0	0.0	0	0	-	-	12	9	4	2
Bettles	0	0	-	-	15	14	0.0	0.0	4	3	0.0	0.0	1	1	1.0	0.0	0	0	-	-	20	18	1	0
<b>District 4</b>	<b>14</b>	<b>11</b>	<b>0.2</b>	<b>0.0</b>	<b>382</b>	<b>100</b>	<b>0.1</b>	<b>0.0</b>	<b>258</b>	<b>102</b>	<b>0.5</b>	<b>0.0</b>	<b>64</b>	<b>61</b>	<b>0.8</b>	<b>0.0</b>	<b>18</b>	<b>18</b>	<b>0.8</b>	<b>0.0</b>	<b>736</b>	<b>292</b>	<b>243</b>	<b>35</b>
Tanana	1	1	0.0	0.0	74	19	0.0	0.0	26	11	0.3	0.1	8	7	0.7	0.1	13	11	0.9	0.0	122	49	27	6
Rampart	0	0	-	-	11	9	0.0	0.0	3	2	1.0	0.0	14	14	0.6	0.0	1	0	-	-	29	25	12	0
Stevens Village	0	0	-	-	13	8	0.1	0.1	10	6	0.8	0.1	6	5	0.4	0.1	2	2	1.0	0.0	31	21	14	3
Birch Creek	0	0	-	-	9	9	0.0	0.0	5	5	0.6	0.0	0	0	-	-	0	0	-	-	14	14	3	0
Beaver	0	0	-	-	12	10	0.0	0.0	13	12	0.5	0.0	7	5	0.6	0.1	0	0	-	-	32	27	12	2
Fort Yukon	0	0	-	-	110	9	0.0	0.0	42	10	0.5	0.1	20	18	0.8	0.0	1	1	1.0	0.0	173	38	38	12
Venetie	0	0	-	-	38	5	0.2	0.2	8	3	0.6	0.2	5	4	0.8	0.1	3	3	0.7	0.0	54	15	19	15
Chalkyitsik	0	0	-	-	29	29	0.1	0.0	2	2	0.5	0.0	4	3	0.7	0.2	0	0	-	-	35	34	8	1
<b>District 5</b>	<b>1</b>	<b>1</b>	<b>0.0</b>	<b>0.0</b>	<b>296</b>	<b>98</b>	<b>0.0</b>	<b>0.0</b>	<b>109</b>	<b>51</b>	<b>0.5</b>	<b>0.0</b>	<b>64</b>	<b>56</b>	<b>0.7</b>	<b>0.0</b>	<b>20</b>	<b>17</b>	<b>0.8</b>	<b>0.0</b>	<b>490</b>	<b>223</b>	<b>133</b>	<b>20</b>
<b>Survey Totals</b>	<b>32</b>	<b>27</b>	<b>0.2</b>	<b>0.0</b>	<b>1,113</b>	<b>286</b>	<b>0.1</b>	<b>0.0</b>	<b>1,058</b>	<b>414</b>	<b>0.6</b>	<b>0.0</b>	<b>260</b>	<b>244</b>	<b>0.8</b>	<b>0.0</b>	<b>56</b>	<b>53</b>	<b>0.9</b>	<b>0.0</b>	<b>2,519</b>	<b>1,024</b>	<b>1,072</b>	<b>61</b>

a The total number of households (N), the number of households contacted (n), standard error (SE), and includes 95 percent confidence interval, CI (95%). Dashes indicate indefinable values.

Table 5. Primary fishing gear used to harvest salmon by subsistence fishing households in surveyed villages, Yukon Area, 1999

Community	Total Number of Households	Number of Households Surveyed	Number of Households Subsistence Fished	Primary Gear Used					
				Set Gillnets	Drift Gillnets	Fishwheels	Hook and Line		
Hooper Bay	194	56 (28.9%)	32 (57.1%)	13 (40.6%)	19 (59.4%)	0 (0.0%)	0	0	(0.0%)
Scammon Bay	76	20 (26.3%)	12 (60.0%)	12 (100.0%)	0 (0.0%)	0 (0.0%)	0	0	(0.0%)
Coastal District	270	76 (28.1%)	44 (57.9%)	25 (56.8%)	19 (43.2%)	0 (0.0%)	0	0	(0.0%)
Sheldon's Point	35	31 (88.6%)	18 (58.1%)	1 (5.9%)	16 (94.1%)	0 (0.0%)	0	0	(0.0%)
Alakanuk	128	43 (33.6%)	22 (51.2%)	0 (0.0%)	22 (100.0%)	0 (0.0%)	0	0	(0.0%)
Emmonak	157	69 (43.9%)	39 (56.5%)	11 (28.2%)	28 (71.8%)	0 (0.0%)	0	0	(0.0%)
Kotlik	90	31 (34.4%)	21 (67.7%)	10 (47.6%)	11 (52.4%)	0 (0.0%)	0	0	(0.0%)
District 1	410	174 (42.4%)	100 (57.5%)	22 (22.2%)	77 (77.8%)	0 (0.0%)	0	0	(0.0%)
Mountain Village	151	49 (32.5%)	40 (81.6%)	4 (10.0%)	36 (90.0%)	0 (0.0%)	0	0	(0.0%)
Pitkas Point	26	26 (100.0%)	20 (76.9%)	2 (10.5%)	17 (89.5%)	0 (0.0%)	0	0	(0.0%)
St. Mary's	118	37 (31.4%)	27 (73.0%)	0 (0.0%)	26 (100.0%)	0 (0.0%)	0	0	(0.0%)
Pilot Station	95	40 (42.1%)	23 (57.5%)	1 (4.2%)	22 (91.7%)	1 (4.2%)	0	0	(0.0%)
Marshall	68	29 (42.6%)	19 (65.5%)	5 (26.3%)	14 (73.7%)	0 (0.0%)	0	0	(0.0%)
District 2	458	181 (39.5%)	129 (71.3%)	12 (9.4%)	115 (89.8%)	1 (0.8%)	0	0	(0.0%)
Russian Mission	57	17 (29.8%)	14 (82.4%)	10 (76.9%)	3 (23.1%)	0 (0.0%)	0	0	(0.0%)
Holy Cross	66	32 (48.5%)	22 (68.8%)	1 (4.8%)	20 (95.2%)	0 (0.0%)	0	0	(0.0%)
Shageluk	32	29 (90.6%)	19 (65.5%)	19 (100.0%)	0 (0.0%)	0 (0.0%)	0	0	(0.0%)
District 3	155	78 (50.3%)	55 (70.5%)	30 (56.8%)	23 (43.4%)	0 (0.0%)	0	0	(0.0%)
Anvik	40	35 (87.5%)	12 (34.3%)	2 (16.7%)	10 (83.3%)	0 (0.0%)	0	0	(0.0%)
Grayling	51	27 (52.9%)	22 (81.5%)	1 (4.5%)	20 (90.9%)	1 (4.5%)	0	0	(0.0%)
Kaltag	57	23 (40.4%)	16 (69.6%)	0 (0.0%)	16 (100.0%)	0 (0.0%)	0	0	(0.0%)
Nulato	100	30 (30.0%)	15 (50.0%)	3 (21.4%)	11 (78.6%)	0 (0.0%)	0	0	(0.0%)
Koyukuk	38	35 (92.1%)	17 (48.6%)	5 (31.3%)	9 (56.3%)	1 (6.3%)	1	1	(6.3%)
Galena	183	40 (21.9%)	21 (52.5%)	9 (42.9%)	8 (38.1%)	4 (19.0%)	0	0	(0.0%)
Ruby	73	19 (26.0%)	6 (31.6%)	3 (50.0%)	0 (0.0%)	3 (50.0%)	0	0	(0.0%)
Huslia	84	17 (20.2%)	5 (29.4%)	4 (80.0%)	1 (20.0%)	0 (0.0%)	0	0	(0.0%)
Hughes	24	19 (79.2%)	8 (42.1%)	8 (100.0%)	0 (0.0%)	0 (0.0%)	0	0	(0.0%)
Allakaket	54	20 (37.0%)	6 (30.0%)	6 (100.0%)	0 (0.0%)	0 (0.0%)	0	0	(0.0%)
Alatna	12	9 (75.0%)	3 (33.3%)	3 (100.0%)	0 (0.0%)	0 (0.0%)	0	0	(0.0%)
Bettles	20	18 (90.0%)	1 (5.6%)	1 (100.0%)	0 (0.0%)	0 (0.0%)	0	0	(0.0%)
District 4	736	292 (39.7%)	132 (45.2%)	45 (34.6%)	75 (57.7%)	9 (6.9%)	1	1	(0.8%)
Tanana	122	49 (40.2%)	19 (38.8%)	9 (47.4%)	0 (0.0%)	10 (52.6%)	0	0	(0.0%)
Rampart	29	25 (86.2%)	11 (44.0%)	9 (81.8%)	0 (0.0%)	2 (18.2%)	0	0	(0.0%)
Stevens Village	31	21 (67.7%)	10 (47.6%)	9 (90.0%)	0 (0.0%)	1 (10.0%)	0	0	(0.0%)
Birch Creek	14	14 (100.0%)	3 (21.4%)	3 (100.0%)	0 (0.0%)	0 (0.0%)	0	0	(0.0%)
Beaver	32	27 (84.4%)	10 (37.0%)	10 (100.0%)	0 (0.0%)	0 (0.0%)	0	0	(0.0%)
Fort Yukon	173	38 (22.0%)	20 (52.6%)	7 (35.0%)	0 (0.0%)	13 (65.0%)	0	0	(0.0%)
Venetie	54	15 (27.8%)	8 (53.3%)	4 (50.0%)	0 (0.0%)	4 (50.0%)	0	0	(0.0%)
Chalkyitsik	35	34 (97.1%)	7 (20.6%)	7 (100.0%)	0 (0.0%)	0 (0.0%)	0	0	(0.0%)
District 5	490	223 (45.5%)	88 (39.5%)	58 (65.9%)	0 (0.0%)	30 (34.1%)	0	0	(0.0%)
Survey Totals	2,519	1,024 (40.7%)	548 (53.5%)	192 (35.4%)	309 (57.0%)	40 (7.4%)	1	1	(0.2%)

Table 6. Subsistence salmon harvest estimates and corresponding confidence intervals (CI) for surveyed villages, Yukon Area, 1999.

Community	Total Households	Households Contacted <sup>a</sup>	Chinook Salmon		Summer Chum Salmon		Fall Chum Salmon		Coho Salmon	
			Estimated Total	CI(95%) (+/-)	Estimated Total	CI(95%) (+/-)	Estimated Total	CI(95%) (+/-)	Estimated Total	CI(95%) (+/-)
Hooper Bay	194	56	173	47	10,146	3,170	0	0	68	113
Scammon Bay	76	20	938	436	3,315	1,630	204	243	0	0
<b>Coastal District</b>	<b>270</b>	<b>76</b>	<b>1,111</b>	<b>439</b>	<b>13,461</b>	<b>3,564</b>	<b>204</b>	<b>243</b>	<b>68</b>	<b>113</b>
Sheldon's Point	35	31	855	176	1,343	247	115	53	51	28
Alakanuk	128	43	1,236	635	3,808	2,153	558	198	108	12
Emmonak	157	69	2,172	823	8,194	1,995	286	245	387	338
Kotlik	90	31	929	454	4,107	1,735	1,482	937	535	245
<b>District 1</b>	<b>410</b>	<b>174</b>	<b>5,192</b>	<b>1,148</b>	<b>17,452</b>	<b>3,419</b>	<b>2,441</b>	<b>990</b>	<b>1,081</b>	<b>419</b>
Mountain Village	151	49	2,161	531	10,059	3,725	960	522	663	302
Pitkas Point	26	25	632	49	849	123	53	8	302	182
St. Mary's	118	37	2,150	368	6,752	1,921	722	577	536	580
Pilot Station	95	40	2,356	740	3,629	1,647	187	137	69	66
Marshall	68	29	2,007	935	1,031	447	696	571	1,041	1,147
<b>District 2</b>	<b>458</b>	<b>180</b>	<b>9,306</b>	<b>1,357</b>	<b>22,320</b>	<b>4,527</b>	<b>2,618</b>	<b>975</b>	<b>2,611</b>	<b>1,334</b>
Russian Mission	57	16	2,722	1,392	616	246	100	0	542	142
Holy Cross	66	32	4,581	1,613	264	127	239	80	62	3
Shageluk	32	29	412	25	4,868	30	76	4	6	4
<b>District 3</b>	<b>155</b>	<b>77</b>	<b>7,715</b>	<b>2,131</b>	<b>5,748</b>	<b>278</b>	<b>415</b>	<b>80</b>	<b>610</b>	<b>142</b>
Anvik	40	35	776	97	848	47	126	28	282	36
Grayling	51	27	2,476	711	4,126	1,627	1,370	598	201	158
Kaitag	57	23	2,050	725	625	51	281	96	263	0
Nulato	100	30	1,799	686	1,945	200	2,338	2,668	170	115
Koyukuk	38	34	506	40	197	37	1,544	55	295	0
Galena	183	40	2,539	1,538	1,688	410	1,932	679	123	13
Ruby	73	19	777	204	1,697	7	907	360	620	0
Huslia	84	17	90	119	1,192	768	89	108	15	13
Hughes	24	19	105	54	577	183	84	31	10	2
Allakaket	54	20	108	0	2,245	0	20	0	0	0
Alatna	12	9	10	10	99	38	0	0	0	0
Bettles	20	18	1	0	100	0	0	0	0	0
<b>District 4</b>	<b>736</b>	<b>291</b>	<b>11,237</b>	<b>1,984</b>	<b>15,339</b>	<b>1,867</b>	<b>8,691</b>	<b>2,844</b>	<b>1,979</b>	<b>199</b>
Tanana	122	49	3,388	843	1,214	430	22,305	4,010	3,989	1,511
Rampart	29	25	2,018	102	60	2	4,324	0	126	0
Stevens Village	31	21	1,214	302	26	15	20	0	0	0
Birch Creek	14	14	24	0	0	0	0	0	0	0
Beaver	32	27	473	137	91	45	16	15	0	0
Fort Yukon	173	38	2,539	707	0	0	9,702	8,668	124	69
Venetie	54	15	127	73	166	124	2,011	949	0	0
Chalkyitsik	35	34	35	14	0	0	442	240	0	0
<b>District 5</b>	<b>490</b>	<b>223</b>	<b>9,818</b>	<b>1,156</b>	<b>1,557</b>	<b>450</b>	<b>38,820</b>	<b>9,600</b>	<b>4,239</b>	<b>1,513</b>
<b>Survey Totals</b>	<b>2,519</b>	<b>1,021</b>	<b>44,379</b>	<b>3,628</b>	<b>75,877</b>	<b>6,975</b>	<b>53,189</b>	<b>10,112</b>	<b>10,588</b>	<b>2,078</b>

<sup>a</sup> The number of households contacted per species may vary. The number of households indicated is the greatest number of households contacted for a given species.

Table 7 Estimated subsistence harvest of chinook salmon by fishing location in surveyed villages, Yukon Area, 1999

Community	Coastal District	Districts			Subdistricts						River Drainages					Total by Community	
		1	2	3 a	4-A b	4-B	4-C	5-A	5-B	5-C	5-D	Innoko	Koyukuk	Chandalar d	Porcupine		Black
Hooper Bay	173	0															173
Scammon Bay	51	887															938
Coastal District	224	887															1,111
Sheldon's Point	0	855															855
Alakanuk	0	1,236															1,236
Emmonak	0	2,172															2,172
Kotlik	332	597															929
District 1	332	4,860															5,192
Mountain Village		354	1,600	207													2,161
Pitkas Point		30	539	63													632
St. Mary's		120	2,030	0													2,150
Pilot Station		0	2,356	0													2,356
Marshall		0	2,007	0													2,007
District 2		504	8,532	270													9,306
Russian Mission		153	0	2,569	0							0					2,722
Holy Cross		0	0	4,581	0							0					4,581
Shageluk		0	0	30	68							314					412
District 3		153	0	7,180	68							314					7,715
Anvik					742	34	0					0	0				776
Grayling					2,436	0	0					40	0				2,476
Kallag					2,050	0	0					0	0				2,050
Nulato					1,799	0	0					0	0				1,799
Koyukuk					294	113	91					0	8				506
Galena					1,342	547	650					0	0				2,539
Ruby					0	16	761					0	0				777
Huslia					0	0	0					0	90				90
Hughes					0	0	0					0	105				105
Allakaket					0	0	0					0	108				108
Alatna					0	0	0					0	10				10
Bettles					0	0	0					0	1				1
District 4					8,663	710	1,502					40	322				11,237
Tanana								367	3,021	0	0				0		3,388
Rampart								200	0	1,818	0				0		2,018
Stevens Village								0	0	756	458				0		1,214
Birch Creek								0	0	0	24				0		24
Beaver								0	0	0	473				0		473
Fort Yukon								0	0	0	2,388				151		2,539
Venetie								0	0	0	127				0		127
Chalkyitsik								0	0	0	35				0		35
District 5								567	3,021	2,574	3,505				151		9,818
Survey Totals	556	6,404	8,532	7,450	8,731	710	1,502	567	3,021	2,574	3,505	354	322	0	151	0	44,379

a Except for the Innoko River drainage.

b Except for the Koyukuk River drainage.

c Except for the Chandalar and Porcupine River drainages.

d Except for the Black River drainage.

Table 8. Estimated subsistence harvest of summer chum salmon by fishing location in surveyed villages, Yukon Area, 1999

Community	Coastal District	Districts			Subdistricts						River Drainages					Total by Community	
		1	2	3 a	4-A b	4-B	4-C	5-A	5-B	5-C	5-D	Innoko	Koyukuk	Chandalar	Porcupine		Black
Hooper Bay	10,146	0															10,146
Scammon Bay	238	3,077															3,315
Coastal District	10,384	3,077															13,461
Sheldon's Point	0	1,343															1,343
Alakanuk	0	3,808															3,808
Emmonak	0	8,194															8,194
Kotlik	1,508	2,599															4,107
District 1	1,508	15,944															17,452
Mountain Village		2,695	7,298	66													10,059
Pitkas Point		96	748	5													849
St. Mary's		480	6,272	0													6,752
Pilot Station		0	3,629	0													3,629
Marshall		0	1,031	0													1,031
District 2		3,271	18,978	71													22,320
Russian Mission		7	609	0								0					616
Holy Cross		0	264	0								0					264
Shageluk		0	0	75								4,793					4,868
District 3		7	873	75								4,793					5,748
Anvik					826	22	0					0	0				848
Grayling					3,024	0	0					1,102	0				4,126
Kaltag					625	0	0					0	0				625
Nulato					1,945	0	0					0	0				1,945
Koyukuk					137	30	0					0	30				197
Galena					122	726	840					0	0				1,688
Ruby					0	640	1,057					0	0				1,697
Huslia					0	0	0					0	1,192				1,192
Hughes					0	0	0					0	577				577
Allakaket					0	0	0					0	2,245				2,245
Alatna					0	0	0					0	99				99
Bettles					0	0	0					0	100				100
District 4					6,679	1,418	1,897					1,102	4,243				15,339
Tanana								42	1,172	0	0			0			1,214
Rampart								25	0	35	0			0			60
Stevens Village								0	0	8	18			0			26
Birch Creek								0	0	0	0			0			0
Beaver								0	0	0	91			0			91
Fort Yukon								0	0	0	0			0			0
Venetie								0	0	0	80			86			166
Chalkyitsik								0	0	0	0			0			0
District 5								67	1,172	43	189			86			1,557
Survey Totals	11,892	22,299	18,978	944	6,754	1,418	1,897	67	1,172	43	189	5,895	4,243	86	0	0	75,877

a Except for the Innoko River drainage.

b Except for the Koyukuk River drainage.

c Except for the Chandalar and Porcupine River drainages.

d Except for the Black River drainage.

Table 9 Estimated subsistence harvest of fall chum salmon by fishing location in surveyed villages, Yukon Area, 1999.

Community	Coastal District	Districts			Subdistricts						River Drainages					Total by Community	
		1	2	3 a	4-A b	4-B	4-C	5-A	5-B	5-C	5-D	Innoko	Koyukuk	Chandalar d	Porcupine		Black
Hooper Bay		0															0
Scammon Bay		204															204
Coastal District		204															204
Sheldon's Point	0	115															115
Alakanuk	0	558															558
Emmonak	0	286															286
Kotlik	146	1,336															1,482
District 1	146	2,295															2,441
Mountain Village		62	853	45													960
Pitkas Point		6	47	0													53
St. Mary's		58	664	0													722
Pilot Station		0	187	0													187
Marshall		0	696	0													696
District 2		126	2,447	45													2,618
Russian Mission				100	0							0					100
Holy Cross				239	0							0					239
Shageluk				60	10							6					76
District 3				399	10							6					415
Anvik					125	1	0						0				126
Grayling					1,370	0	0						0				1,370
Kaltag					281	0	0						0				281
Nulato					2,338	0	0						0				2,338
Koyukuk					970	554	0						20				1,544
Galena					456	728	748						0				1,932
Ruby					0	231	676						0				907
Huslia					67	0	0						22				89
Hughes					0	0	0						84				84
Allakaket					0	0	0						20				20
Alatna					0	0	0						0				0
Bettles					0	0	0						0				0
District 4					5,607	1,514	1,424						146				8,691
Tanana								3,971	18,334	0	0			0	0	0	22,305
Rampart								500	0	3,824	0			0	0	0	4,324
Stevens Village								0	0	20	0			0	0	0	20
Birch Creek								0	0	0	0			0	0	0	0
Beaver								0	0	0	16			0	0	0	16
Fort Yukon								0	0	0	8,492			0	1,210	0	9,702
Venetie								0	0	0	752			1,259	0	0	2,011
Chalkyitsik								0	0	0	53			0	0	389	442
District 5								4,471	18,334	3,844	9,313			1,259	1,210	389	38,820
Survey Totals	146	2,625	2,447	444	5,617	1,514	1,424	4,471	18,334	3,844	9,313	6	146	1,259	1,210	389	53,189

a Except for the Innoko River drainage.

b Except for the Koyukuk River drainage.

c Except for the Chandalar and Porcupine River drainages.

d Except for the Black River drainage.

Table 10 Estimated subsistence harvest of coho salmon by fishing location in surveyed villages, Yukon Area, 1999.

Community	Coastal District	Districts			Subdistricts						River Drainages					Total by Community		
		1	2	3 a	4-A b	4-B	4-C	5-A	5-B	5-C	5-D	Innoko	Koyukuk	Chandalar d	Porcupine		Black	
Hooper Bay	68																	68
Scammon Bay	0																	0
Coastal District	68																	68
Sheldon's Point	0	51																51
Alakanuk	0	108																108
Emmonak	0	387																387
Kotlik	36	499																535
District 1	36	1,045																1,081
Mountain Village		21	621	21														663
Pitkas Point		0	302	0														302
St. Mary's		0	536	0														536
Pilot Station		0	69	0														69
Marshall		0	1,041	0														1,041
District 2		21	2,569	21														2,611
Russian Mission				542									0					542
Holy Cross				62									0					62
Shageluk				0									6					6
District 3				604									6					610
Anvik					281	1	0						0					282
Grayling					201	0	0						0					201
Kaitag					263	0	0						0					263
Nulato					170	0	0						0					170
Koyukuk					30	265	0						0					295
Galena					8	60	55						0					123
Ruby					0	581	39						0					620
Huslia					0	0	0						15					15
Hughes					0	0	0						10					10
Allakaket					0	0	0						0					0
Alatna					0	0	0						0					0
Bettles					0	0	0						0					0
District 4					953	907	94						25					1,979
Tanana								1,620	2,369	0	0							3,989
Rampart								0	0	126	0							126
Stevens Village								0	0	0	0							0
Birch Creek								0	0	0	0							0
Beaver								0	0	0	0							0
Fort Yukon								0	0	0	124							124
Venetie								0	0	0	0							0
Chalkyitsik								0	0	0	0							0
District 5								1,620	2,369	126	124							4,239
Survey Totals	104	1,066	2,569	625	953	907	94	1,620	2,369	126	124	6	25	0	0	0		10,588

a Except for the Innoko River drainage.

b Except for the Koyukuk River drainage.

c Except for the Chandalar and Porcupine River drainages.

d Except for the Black River drainage.

Table 11 Estimated or reported subsistence harvest of pink salmon and other select miscellaneous fish species by surveyed villages, Yukon Area, 1999

Community	Estimated Subsistence Harvest with Corresponding Confidence Intervals (CI) (Expanded to Estimate Survey Village Harvest)												Reported Harvest of Miscellaneous Fish Species, (Not Expanded)						
	Total Households	Households Contacted <sup>b</sup>	Whitefish <sup>a</sup>										Burbot	Lamprey	Tomcod	Grayling	Sucker	Arctic Char	Blackfish
			Pink Salmon		Large Whitefish		Small Whitefish		Pike		Sheefish								
			Estimated Total	CI(95%) (+/-)	Estimated Total	CI(95%) (+/-)	Estimated Total	CI(95%) (+/-)	Estimated Total	CI(95%) (+/-)	Estimated Total	CI(95%) (+/-)							
Hooper Bay	194	56	99	23	22	28	2,512	764	771	1,023	74	85	12	0	1,137	0	0	0	14,785
Scammon Bay	76	20	527	619	357	291	564	393	1,248	620	10	12	29	0	587	0	0	5	8,060
Coastal District	270	76	626	620	379	292	3,076	859	2,019	1,196	84	86	41	0	1,724	0	0	5	22,845
Sheldon's Point	35	31	0	0	89	17	815	200	21	5	304	47	0	0	0	0	0	0	5,950
Alakanuk	128	43	0	0	155	91	1,608	1,200	5	6	176	95	2	0	0	0	0	0	2,800
Emmonak	157	69	17	28	452	210	2,144	749	341	155	482	178	67	0	420	2	0	3	7,052
Kotlik	90	31	15	19	460	227	2,443	1,166	554	200	1,802	736	212	0	255	0	0	6	2,900
District 1	410	174	32	33	1,156	323	7,010	1,844	921	253	2,764	765	281	0	675	2	0	9	18,702
Mountain Village	151	49	0	0	1,669	676	609	579	2,791	810	746	332	2,860	2,425	0	110	0	17	20,020
Pitkas Point	26	25	12	10	683	133	1	0	181	21	189	30	193	1,110	0	20	0	0	19,250
St. Mary's	118	37	1	0	2,419	569	656	241	2,058	675	404	189	4,308	1,125	0	15	0	2	16,805
Pilot Station	95	40	8	11	7,409	6,795	0	0	2,562	1,855	2,799	2,747	732	3,555	0	294	0	4	53,000
Marshall	68	29	0	0	5,417	5,424	0	0	1,881	848	523	452	1,715	14,870	0	0	0	0	13,300
District 2	458	180	21	14	17,597	8,741	1,266	627	9,473	2,296	4,661	2,809	9,808	22,885	0	439	0	23	122,375
Russian Mission	57	16	0	0	728	324	0	0	1,462	625	250	157	671	7,650	0	2	0	2	770
Holy Cross	66	32	0	0	0	0	1,088	1,384	202	94	68	52	37	0	0	5	0	0	0
Shageluk	32	29	0	0	6	0	1,451	149	367	24	314	32	11	0	0	0	4	0	0
District 3	155	77	0	0	734	324	2,539	1,392	2,031	633	632	169	719	7,650	0	7	4	2	770
Anvik	40	35	0	0	9	6	201	54	141	33	133	33	5	0	0	25	0	0	0
Grayling	51	27	1	0	0	0	380	0	94	0	177	0	9	0	0	10	0	0	0
Kaltag	57	23	1	0	0	0	499	190	17	19	112	70	31	0	0	60	0	0	0
Nulato	100	30	0	0	0	0	1,733	2,072	35	23	230	193	16	0	0	196	0	50	0
Koyukuk	38	34	0	0	0	0	1,280	238	156	58	494	96	151	0	0	200	0	20	0
Galena	183	40	0	0	753	31	769	0	52	0	215	84	98	0	0	0	0	0	560
Ruby	73	19	0	0	200	0	779	697	134	130	242	176	9	0	0	0	25	0	0
Huslia	84	17	0	0	351	358	0	0	114	139	268	135	0	1	0	20	0	0	0
Hughes	24	19	0	0	739	247	150	0	158	141	411	207	2	0	0	60	0	0	0
Allakaket	54	20	0	0	0	0	637	99	235	0	540	30	203	0	0	18	0	0	0
Alatna	12	9	0	0	0	0	54	15	3	0	75	0	9	0	0	0	0	0	0
Bettles	20	18	0	0	0	0	3	1	36	3	46	13	5	0	0	16	0	12	0
District 4	736	291	2	0	2,052	436	6,485	2,211	1,175	248	2,943	390	538	1	0	605	25	82	560
Tanana	122	49	0	0	2,174	546	3,947	977	132	77	1,116	293	55	0	0	32	75	4	0
Rampart	29	25	0	0	165	0	133	0	0	0	38	0	0	0	0	55	0	6	0
Stevens Village	31	21	0	0	46	0	680	815	76	4	0	0	10	0	0	0	0	0	0
Birch Creek	14	14	0	0	0	0	95	0	80	0	35	0	15	0	0	0	0	0	0
Beaver	32	27	0	0	14	15	0	0	66	37	7	3	0	0	0	0	0	0	0
Fort Yukon	173	38	0	0	391	205	606	186	547	274	247	105	78	0	0	202	0	0	0
Venetie	54	15	0	0	153	278	0	0	195	242	0	0	0	0	0	126	0	0	0
Chalkyitsik	35	34	0	0	46	39	3	3	213	131	23	21	0	0	0	8	0	0	0
District 5	490	223	0	0	2,989	647	5,464	1,285	1,309	398	1,466	312	158	0	0	423	75	10	0
Survey Totals	2,519	1,021	681	621	24,907	8,792	25,841	3,607	16,928	2,718	12,550	2,960	11,545	30,536	2,399	1,476	104	131	165,252

a Large whitefish are considered those 4 pounds or larger and small whitefish are less than 4 pounds.

b The number of households contacted per species may vary. The number of households indicated is the greatest number of households contacted for a given species.



Table 12 Estimated number of salmon used for subsistence purposes and corresponding confidence intervals (CI) for surveyed villages, Yukon Area, 1999

Community	Total Households	Households Contacted <sup>a</sup>	Chinook Salmon		Summer Chum Salmon		Fall Chum Salmon		Coho Salmon	
			Estimated Total	CI(95%) (+/-)	Estimated Total	CI(95%) (+/-)	Estimated Total	CI(95%) (+/-)	Estimated Total	CI(95%) (+/-)
Hooper Bay	194	56	301	104	10,017	1,845	0	0	68	113
Scammon Bay	76	20	898	466	4,048	2,069	136	224	0	0
<b>Coastal District</b>	<b>270</b>	<b>76</b>	<b>1,199</b>	<b>477</b>	<b>14,065</b>	<b>2,772</b>	<b>136</b>	<b>224</b>	<b>68</b>	<b>113</b>
Sheldon's Point	35	31	904	136	1,409	184	111	41	52	21
Alakanuk	128	43	1,081	272	3,134	702	593	199	259	61
Emmonak	157	69	2,194	631	10,383	2,151	2,075	861	490	349
Kotlik	90	31	719	276	3,797	1,287	1,252	729	459	243
<b>District 1</b>	<b>410</b>	<b>174</b>	<b>4,898</b>	<b>753</b>	<b>18,723</b>	<b>2,609</b>	<b>4,031</b>	<b>1,146</b>	<b>1,260</b>	<b>430</b>
Mountain Village	151	49	1,930	555	9,744	3,763	1,078	502	754	306
Pitkas Point	26	25	654	53	934	130	63	8	296	182
St. Mary's	118	35	1,836	385	5,489	1,674	381	113	238	165
Pilot Station	95	40	3,187	1,998	3,465	1,052	175	142	59	57
Marshall	68	29	2,725	920	1,337	384	692	461	1,061	1,077
<b>District 2</b>	<b>458</b>	<b>178</b>	<b>10,332</b>	<b>2,301</b>	<b>20,969</b>	<b>4,270</b>	<b>2,389</b>	<b>705</b>	<b>2,408</b>	<b>1,148</b>
Russian Mission	57	16	2,681	1,278	547	231	100	0	542	142
Holy Cross	66	32	4,081	1,412	281	135	242	80	62	3
Shageluk	32	29	492	31	4,834	37	123	14	6	4
<b>District 3</b>	<b>155</b>	<b>77</b>	<b>7,254</b>	<b>1,905</b>	<b>5,662</b>	<b>270</b>	<b>465</b>	<b>82</b>	<b>610</b>	<b>142</b>
Anvik	40	34	799	78	570	15	104	32	179	31
Grayling	51	27	2,264	575	3,675	1,727	1,193	525	201	158
Kaltag	57	23	2,214	574	622	49	721	365	278	23
Nulato	100	30	1,577	515	1,905	155	1,926	2,253	170	115
Koyukuk	38	34	436	56	253	233	1,273	74	295	0
Galena	183	39	2,302	1,208	2,495	2,096	1,715	591	115	0
Ruby	73	19	1,229	742	5,449	6,131	2,252	2,409	654	70
Huslia	84	17	155	86	1,030	624	207	127	15	13
Hughes	24	19	99	50	539	151	93	49	10	2
Alakaket	54	20	162	77	2,565	386	20	0	0	0
Alatna	12	9	17	15	59	28	0	0	0	0
Bettles	20	18	2	1	100	0	2	1	0	0
<b>District 4</b>	<b>736</b>	<b>289</b>	<b>11,256</b>	<b>1,721</b>	<b>19,262</b>	<b>6,754</b>	<b>9,506</b>	<b>3,415</b>	<b>1,917</b>	<b>211</b>
Tanana	122	48	1,800	389	1,096	356	23,844	4,186	3,942	1,507
Rampart	29	24	1,600	30	48	10	4,096	0	132	5
Stevens Village	31	18	1,122	287	38	42	391	495	0	0
Birch Creek	14	13	91	27	0	0	23	2	0	0
Beaver	32	26	304	54	89	45	14	15	0	0
Fort Yukon	173	37	1,742	557	0	0	9,694	8,499	166	100
Venetie	54	14	236	177	166	124	2,041	942	0	0
Chalkyitsik	35	31	43	9	0	0	495	241	0	0
<b>District 5</b>	<b>490</b>	<b>211</b>	<b>6,938</b>	<b>761</b>	<b>1,437</b>	<b>382</b>	<b>40,598</b>	<b>9,536</b>	<b>4,240</b>	<b>1,511</b>
<b>Survey Totals</b>	<b>2,519</b>	<b>1,005</b>	<b>41,877</b>	<b>3,641</b>	<b>80,118</b>	<b>8,863</b>	<b>57,125</b>	<b>10,221</b>	<b>10,504</b>	<b>1,965</b>

<sup>a</sup> The number of households contacted per species may vary. The number of households indicated is the greatest number of households contacted for a given species.

Table 13 Estimated number of salmon retained from commercial harvests for subsistence use (commercial-related) and corresponding confidence intervals (CI) for surveyed villages, Yukon Area, 1999

Community	Total Households	Households Contacted <sup>a</sup>	Chinook Salmon		Summer Chum Salmon		Fall Chum Salmon		Coho Salmon	
			Estimated Total	CI(95%) (+/-)	Estimated Total	CI(95%) (+/-)	Estimated Total	CI(95%) (+/-)	Estimated Total	CI(95%) (+/-)
Hooper Bay	194	56	0	0	0	0	0	0	0	0
Scammon Bay	76	20	20	23	119	168	0	0	0	0
<b>Coastal District</b>	<b>270</b>	<b>76</b>	<b>20</b>	<b>23</b>	<b>119</b>	<b>168</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Sheldon's Point	35	31	0	0	0	0	0	0	0	0
Alakanuk	128	43	0	0	0	0	0	0	0	0
Emmonak	157	69	9	10	60	37	0	0	0	0
Kotlik	90	31	4	6	36	21	1	0	0	0
<b>District 1</b>	<b>410</b>	<b>174</b>	<b>13</b>	<b>12</b>	<b>96</b>	<b>42</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>
Mountain Village	151	49	7	4	21	29	0	0	0	0
Pitkas Point	26	25	0	0	9	5	0	0	0	0
St. Mary's	118	37	11	17	11	17	0	0	0	0
Pilot Station	95	40	0	0	18	15	0	0	0	0
Marshall	68	29	11	0	57	11	0	0	0	0
<b>District 2</b>	<b>458</b>	<b>180</b>	<b>29</b>	<b>18</b>	<b>116</b>	<b>38</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Russian Mission	57	16	0	0	4	6	0	0	0	0
Holy Cross	66	32	1	0	0	0	0	0	0	0
Shageluk	32	29	13	12	0	0	0	0	0	0
<b>District 3</b>	<b>155</b>	<b>77</b>	<b>14</b>	<b>12</b>	<b>4</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Anvik	40	35	0	0	0	0	0	0	0	0
Grayling	51	27	0	0	0	0	0	0	0	0
Kaltag	57	23	0	0	0	0	0	0	0	0
Nulato	100	30	0	0	0	0	0	0	0	0
Koyukuk	38	34	0	0	0	0	0	0	0	0
Galena	183	40	39	65	0	0	0	0	0	0
Ruby	73	19	0	0	0	0	0	0	0	0
Huslia	84	17	0	0	0	0	0	0	0	0
Hughes	24	19	0	0	0	0	0	0	0	0
Allakaket	54	20	0	0	0	0	0	0	0	0
Alatna	12	9	0	0	0	0	0	0	0	0
Bettles	20	18	0	0	0	0	0	0	0	0
<b>District 4</b>	<b>736</b>	<b>291</b>	<b>39</b>	<b>65</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Tanana	122	49	59	31	0	0	0	0	0	0
Rampart	29	25	0	0	0	0	0	0	0	0
Stevens Village	31	21	0	0	0	0	0	0	0	0
Birch Creek	14	14	0	0	0	0	0	0	0	0
Beaver	32	27	0	0	0	0	0	0	0	0
Fort Yukon	173	38	0	0	0	0	0	0	0	0
Venetie	54	15	0	0	0	0	0	0	0	0
Chalkyitsik	35	34	0	0	0	0	0	0	0	0
<b>District 5</b>	<b>490</b>	<b>223</b>	<b>59</b>	<b>31</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Survey Totals</b>	<b>2,519</b>	<b>1,021</b>	<b>174</b>	<b>80</b>	<b>335</b>	<b>178</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>

<sup>a</sup> The number of households contacted per species may vary. The number of households indicated is the greatest number of households contacted for a given species.

Table 14. Estimated number of households with dogs, number that feed fish to dogs, numbers of dogs, and corresponding confidence intervals (CI) for surveyed villages, Yukon Area, 1999.

Community	Total Households	Households Contacted	Number of Households with Dogs		Number of Household that Feed Fish to Dogs		Number of Dogs	
			Estimated	CI(95%)	Estimated	CI(95%)	Estimated	CI(95%)
			Total	(+/-)	Total	(+/-)	Total	(+/-)
Hooper Bay	194	56	112	34	5	6	181	60
Scammon Bay	76	20	51	18	0	0	95	37
Coastal District	270	76	163	38	5	6	276	71
Sheldon's Point	35	30	21	2	1	1	56	11
Alakanuk	128	43	64	21	1	0	88	41
Emmonak	157	69	97	15	0	0	166	32
Kotlik	90	31	70	13	10	8	141	27
District 1	410	173	252	29	12	8	451	60
Mountain Village	151	49	90	24	15	10	216	92
Pitkas Point	26	25	18	0	3	0	64	18
St. Mary's	118	36	86	24	6	6	162	60
Pilot Station	95	40	59	12	4	4	169	62
Marshall	68	29	59	7	19	11	371	162
District 2	458	179	312	36	47	16	982	206
Russian Mission	57	16	40	14	1	0	175	68
Holy Cross	66	32	31	10	1	0	94	40
Shageluk	32	29	24	2	7	0	105	5
District 3	155	77	95	18	9	0	374	79
Anvik	40	35	30	2	2	1	113	9
Grayling	51	27	38	9	11	8	108	27
Kaltag	57	23	48	8	4	4	96	21
Nulato	100	30	60	23	6	5	262	236
Koyukuk	38	34	25	3	6	2	114	52
Galena	183	38	142	34	16	20	228	65
Ruby	73	19	35	22	20	18	218	163
Huslia	84	17	40	23	6	6	124	47
Hughes	24	19	15	3	7	2	72	24
Allakaket	54	20	33	13	6	5	116	18
Alatna	12	9	4	2	0	0	6	4
Bettles	20	18	11	2	1	0	45	14
District 4	736	289	481	55	84	30	1,502	306
Tanana	122	49	55	14	19	6	465	85
Rampart	29	25	17	2	2	0	34	5
Stevens Village	31	20	18	4	3	2	42	15
Birch Creek	14	14	5	0	0	0	13	0
Beaver	32	25	23	2	5	2	45	8
Fort Yukon	173	36	102	39	14	7	414	191
Venetie	54	14	35	17	11	14	149	86
Chalkyitsik	35	31	18	2	6	1	71	16
District 5	490	214	273	45	59	17	1,233	228
Survey Totals	2,519	1,008	1,576	95	216	40	4,818	450

Table 15 Estimated number of salmon retained for dog food from subsistence and commercial (commercial-related) harvests with corresponding confidence intervals (CI) for surveyed villages, Yukon Area, 1999.

Community	Total Households Households		Summer Chum Salmon Fed to Dogs						Fall Chum Salmon Fed to Dogs						Coho Salmon Fed to Dogs					
			Subsistence		Commercial		Subsistence and Commercial Estimated Total		Subsistence		Commercial		Subsistence and Commercial Estimated Total		Subsistence		Commercial		Subsistence and Commercial Estimated Total	
			Estimated Total	CI(95%) (+/-)	Estimated Total	CI(95%) (+/-)			Estimated Total	CI(95%) (+/-)	Estimated Total	CI(95%) (+/-)			Estimated Total	CI(95%) (+/-)	Estimated Total	CI(95%) (+/-)		
Hooper Bay	194	56	135	0	0	0	135		0	0	0	0	0		0	0	0	0	0	0
Scammon Bay	76	20	0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
<b>Coastal District</b>	<b>270</b>	<b>76</b>	<b>135</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>135</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Sheldon's Point	35	31	0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
Alakanuk	128	43	0	0	0	0	0		0	0	0	0	0		5	0	0	0	0	5
Emmonak	157	69	0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
Kotlik	90	31	254	211	0	0	254		20	0	0	0	20		20	0	0	0	0	20
<b>District 1</b>	<b>410</b>	<b>174</b>	<b>254</b>	<b>211</b>	<b>0</b>	<b>0</b>	<b>254</b>		<b>20</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>20</b>		<b>25</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>25</b>
Mountain Village	151	49	267	338	0	0	267		3	2	0	0	3		304	177	0	0	0	304
Pitkas Point	26	26	33	0	0	0	33		0	0	0	0	0		210	0	0	0	0	210
St. Mary's	118	36	54	0	0	0	54		0	0	0	0	0		0	0	0	0	0	0
Pilot Station	95	40	98	122	0	0	98		0	0	0	0	0		0	0	0	0	0	0
Marshall	68	29	250	276	77	11	326		49	80	0	0	49		763	1,052	0	0	0	763
<b>District 2</b>	<b>458</b>	<b>180</b>	<b>702</b>	<b>453</b>	<b>77</b>	<b>11</b>	<b>778</b>		<b>52</b>	<b>80</b>	<b>0</b>	<b>0</b>	<b>52</b>		<b>1,277</b>	<b>1,067</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1,277</b>
Russian Mission	57	17	85	0	0	0	85		50	0	0	0	50		180	0	0	0	0	180
Holy Cross	66	32	0	0	0	0	0		0	0	0	0	0		60	0	0	0	0	60
Shageluk	32	29	4,068	0	0	0	4,068		0	0	0	0	0		0	0	0	0	0	0
<b>District 3</b>	<b>155</b>	<b>78</b>	<b>4,153</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4,153</b>		<b>50</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>50</b>		<b>240</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>240</b>
Anvik	40	35	500	0	0	0	500		25	0	0	0	25		155	30	0	0	0	155
Grayling	51	27	3,078	1,739	0	0	3,078		380	0	0	0	380		25	0	0	0	0	25
Kaltag	57	23	528	15	0	0	528		63	0	0	0	63		261	0	0	0	0	261
Nulato	100	30	1,738	66	0	0	1,738		10	0	0	0	10		100	0	0	0	0	100
Koyukuk	38	35	91	64	0	0	91		642	34	0	0	642		285	0	0	0	0	285
Galena	183	40	1,525	1,837	0	0	1,525		450	0	0	0	450		60	0	0	0	0	60
Ruby	73	19	5,248	6,121	0	0	5,248		1,763	2,448	0	0	1,763		619	70	0	0	0	619
Huslia	84	17	711	559	0	0	711		0	0	0	0	0		0	0	0	0	0	0
Hughes	24	19	464	140	0	0	464		46	18	0	0	46		8	1	0	0	0	8
Allakaket	54	20	1,613	260	0	0	1,613		20	0	0	0	20		0	0	0	0	0	0
Alatna	12	9	0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
Bettles	20	18	50	0	0	0	50		0	0	0	0	0		0	0	0	0	0	0
<b>District 4</b>	<b>736</b>	<b>292</b>	<b>15,546</b>	<b>6,654</b>	<b>0</b>	<b>0</b>	<b>15,546</b>		<b>3,399</b>	<b>2,448</b>	<b>0</b>	<b>0</b>	<b>3,399</b>		<b>1,513</b>	<b>76</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1,513</b>
Tanana	122	49	1,072	355	0	0	1,072		22,584	4,131	0	0	22,584		3,709	1,433	0	0	0	3,709
Rampart	29	25	18	0	0	0	18		3,463	0	0	0	3,463		11	0	0	0	0	11
Stevens Village	31	19	0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
Birch Creek	14	14	0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
Beaver	32	27	49	37	0	0	49		14	15	0	0	14		0	0	0	0	0	0
Fort Yukon	173	38	211	131	0	0	211		7,760	8,386	0	0	7,760		124	69	0	0	0	124
Venetie	54	15	86	0	0	0	86		1,730	909	0	0	1,730		0	0	0	0	0	0
Chalkyitsik	35	34	0	0	0	0	0		455	236	0	0	455		0	0	0	0	0	0
<b>District 5</b>	<b>490</b>	<b>221</b>	<b>1,436</b>	<b>381</b>	<b>0</b>	<b>0</b>	<b>1,436</b>		<b>36,006</b>	<b>9,395</b>	<b>0</b>	<b>0</b>	<b>36,006</b>		<b>3,844</b>	<b>1,435</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3,844</b>
<b>Survey Totals</b>	<b>2,519</b>	<b>1,021</b>	<b>22,225</b>	<b>6,684</b>	<b>77</b>	<b>11</b>	<b>22,302</b>		<b>39,527</b>	<b>9,709</b>	<b>0</b>	<b>0</b>	<b>39,527</b>		<b>6,899</b>	<b>1,790</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>6,899</b>

a The number of households contacted per species may vary. The number of households contacted indicated is the greatest number of households contacted for a given question.

Table 16. Summary of responses from surveyed households that indicated their subsistence salmon needs were not met in 1999.

Response Summary Category	District				District 4		District	Total Number of Responses	Percent of Total
	Coastal	1	2	3	Mainstem Yukon	Koyukuk River	5		
Miscellaneous reasons, includes "No reason given"	7	20	13	4	11	4	36	95	24.7%
Poor run of fish	6	10	11	3	14	6	19	69	17.9%
Not enough fish caught	2	7	7	2	8	1	10	37	9.6%
Working in another occupation	0	8	7	3	4	1	9	32	8.3%
No gear - boat, net, motor, gas	2	2	9	3	6	4	2	28	7.3%
Medical reasons or elderly	0	6	4	0	4	6	6	26	6.8%
Busy doing other things	2	3	8	2	4	2	3	24	6.2%
Didn't fish - normally don't use fish	1	3	2	0	2	4	7	19	4.9%
Due to environmental conditions, i.e., high water	0	3	1	0	0	9	2	15	3.9%
Still fishing	0	6	1	1	3	0	0	11	2.9%
No helper to harvest or process fish	3	1	3	0	2	0	1	10	2.6%
Out of town	0	0	0	2	3	1	1	7	1.8%
Not enough available to share/barter	1	1	0	0	0	1	4	7	1.8%
Department fishing regulations/restrictions	0	1	1	1	0	0	0	3	0.8%
Will buy or be given more fish	0	1	0	0	0	0	1	2	0.5%
<hr/>									
Households Contacted that Indicated Their Needs were Not Met:	24	72	67	21	61	39	101	385	100%
Total Number of Households Contacted:	76	174	181	78	226	66	223	1,024	
Percent of Households Contacted that Indicated Their Needs were Not Met:	32%	41%	37%	27%	27%	59%	45%	38%	

Table 17. Reported subsistence and personal use fish harvested under the authority of a permit, listed by permit area, Yukon Area, 1999. a

Permit Fishing Area	Permit			Percent Returned	Number of Permits Returned that Fished	Reported Harvest									
	Type	Issued	Returned			Chinook	Summer Chum	Fall Chum	Coho	Whitefish	Sheefish	Burbot	Pike	Suckers	Grayling
Subsistence Use															
Yukon River near Haul Road Bridge	SY	66	64	97%	47	1,653	356	701	2	92	14	10	33	0	16
Yukon River near Circle and Eagle	SE	119	116	97%	71	3,404	364	14,079	0	332	98	36	84	666	398
Tanana River Subdistrict 6A	SA	20	20	100%	10	136	272	5,177	3,244	116	0	1	6	9	0
Tanana River Subdistrict 6B	SB	83	79	95%	47	1,472	2,114	9,756	5,930	1,146	23	27	191	49	0
Tanana River Upstream of Subdistrict 6C	SU	29	29	100%	13	0	0	2	0	1,702	0	7	70	109	0
Kantishna River Subdistrict 6A	SK	4	4	100%	4	1	253	535	220	47	0	4	16	40	1
Tolovana River Pike Subdistrict 6B	ST	54	50	93%	24	15	15	1	0	252	40	16	400	112	24
Subsistence Permit Subtotals		375	362	97%	216	6,681	3,374	30,251	9,396	3,687	175	101	800	985	439
Personal Use															
Tanana River Subdistrict 6C	PC	103	103	100%	67	331	382	261	147	12	1	0	0	1	0
Tanana River Whitefish Upstream of Subdistrict 6C	PW	4	4	100%	2	0	0	1	6	35	0	0	12	0	0
Personal Use Permit Subtotals		107	107	100%	69	331	382	262	153	47	1	0	12	1	0
Permit Totals		482 b	469	97%	285 c	7,012	3,756	30,513	9,549	3,734	176	101	812	986	439

a Includes 1999 permit information received as of March 31, 2000.

b Includes 39 households that were issued permits for more than one different area, includes 27 Minto households who were issued Tolovana River drainage (ST) pike permits.

c Includes nine households that fished in two different permit areas.

Table 18. Reported subsistence and personal use fish harvested under the authority of a permit, listed by fishery, by community of residence, and by drainage, Yukon Area, 1999. a

Community	Harvest by Drainage	Number of Permits				Reported Harvest										
		Permits		Percent Returned	Returned that Fished	Chinook	Summer Chum	Fall Chum	Coho	Whitefish	Sheefish	Burbot	Pike	Sucker	Grayling	
		Issued	Returned													
Subsistence Use																
Central	Yukon River	12	12	100%	6	91	0	0	0	0	0	5	5	0	10	
Circle	Yukon River	21	19	90%	6	524	60	2,722	0	115	10	11	11	20	0	
Eagle	Yukon River	65	64	98%	50	2,558	271	11,292	0	217	86	19	68	646	388	
FNSB b	Yukon River	56	54	96%	40	851	346	681	0	72	14	0	13	0	16	
	Tolovana River	22	22	100%	9	0	0	0	0	0	1	4	25	0	24	
	Tanana River	17	17	100%	10	195	315	1,630	868	351	2	3	27	14	0	
	FNSB Subtotal	95	93	98%	59	1,046	661	2,311	868	423	17	7	65	14	40	
Healy	Tanana River	8	8	100%	4	1	0	2,267	1,259	322	10	13	5	4	1	
Manley	Tanana River	16	16	100%	9	136	272	5,172	3,244	114	0	1	4	9	0	
Minto	Tolovana River	32	28	88%	15	15	15	1	0	252	39	12	375	112	0	
	Tanana River	33	30	91%	14	302	158	780	0	146	10	1	170	0	0	
	Minto Subtotal	65	58	89%	29	317	173	781	0	398	49	13	545	112	0	
Nenana	Tanana River	33	32	97%	25	975	1,894	5,619	4,023	476	1	14	7	71	0	
Stevens Village	Yukon River	6	6	100%	4	545	1	20	0	20	0	10	20	0	0	
Upper Tanana Villages (UTV) c	Yukon River	18	18	100%	7	154	32	65	0	40	2	1	0	0	0	
	Tanana River	25	25	100%	10	0	0	0	0	1,562	0	7	16	109	0	
	UTV Subtotal	43	43	100%	17	154	32	65	0	1,602	2	8	16	109	0	
Other d	Yukon River	7	7	100%	5	334	10	2	2	0	0	0	0	0	0	
	Tanana River	4	4	100%	2	0	0	0	0	0	0	0	54	0	0	
	Other Subtotal	11	11	100%	7	334	10	2	2	0	0	0	54	0	0	
Subsistence Permit Subtotals		375	362	97%	216	6,681	3,374	30,251	9,396	3,687	175	101	800	985	439	
Personal Use																
Other e	Tanana River	107	107	100%	69	331	382	262	153	47	1	0	12	1	0	
Personal Use Permit Subtotals		107	107	100%	69	331	382	262	153	47	1	0	12	1	0	
Permit Totals		482 f	469	97%	285 g	7,012	3,756	30,513	9,549	3,734	176	101	812	986	439	

a Includes permit information received as of March 31, 2000.

b Fairbanks North Star Borough (FNSB) includes residents from the communities of Ester, Fairbanks, Ft. Wainwright, North Pole, and Salcha.

c Upper Tanana Villages include residents from the communities of Delta Junction, Dot Lake, Northway, Tanacross, and Tok.

d Other subsistence permits include residents from the communities of Anchorage, Gakona, Manley, Minto, Nenana, Slana, Tanana, and Wasilla.

e Other personal use permits include residents from the communities of Delta Junction Ester, Fairbanks, Ft. Wainwright, Nenana, North Pole, and Salcha.

f Includes 39 households that were issued permits for more than one different area, includes 27 Minto households who were issued Tolovana River drainage (ST) pike permits.

g Includes nine households that fished in two different permit areas.

Table 19. Household and dog information reported by subsistence and personal use permits issued and returned, listed by fishery and by community of residence, Yukon Area, 1999. a

Community	Permit Information b				Reported Household Information (Based on Permits Issued)					Whole Salmon Fed to Dogs (Based on Permits Returned)	
	Permits		Percent Returned	Numbers of Permits Returned that Fished	Number of People	Number of Fishermen	Number of Households with Dogs	Number of Dogs	Households Indicating Feeding Whole Salmon to Dogs	Number of Households Who Put Whole Salmon up for Dogs	Number of Whole Salmon Fed to Dogs
	Issued	Returned									
Subsistence Use											
Central	12	12	100%	6	24	17	12	35	4	0	0
Circle	21	19	90%	6	54	33	18	86	11	3	2,809
Eagle	65	64	98%	50	156	96	53	255	37	17	7,468
FNSB c	95	93	98%	59	289	164	58	401	19	6	2,837
Healy	8	8	100%	4	24	20	8	142	7	3	3,470
Manley	18	18	100%	11	44	27	17	412	14	4	4,325
Minto	67	60	90%	30	221	105	28	272	25	4	380
Nenana	34	33	97%	26	101	58	28	377	23	8	2,955
Stevens Village	6	6	100%	4	24	8	6	26	2	0	0
Upper Tanana Villages d	43	43	100%	17	157	87	23	68	3	1	25
Other e	6	6	100%	3	19	15	3	12	1	0	0
Subsistence Permit Subtotal	375	362	97%	216	1,113	630	254	2,086	146	46	24,269
Personal Use											
Other f	107	107	100%	69	320	168	-	-	-	-	-
Personal Use Permit Subtotal	107	107	100%	69	320	168	-	-	-	-	-
Permit Totals	482	469	97%	285 g	1,433	798	254	2,086	146	46	24,269

a Includes permit information received as of March 31, 2000.

b Includes 39 households that were issued permits for more than one different area, including 27 Minto households who were issued Tolovana River drainage (ST) pike permits.

c Fairbanks North Star Borough (FNSB) includes residents from the communities of Ester, Fairbanks, Ft. Wainwright, North Pole, and Salcha.

d Upper Tanana Villages include residents from the communities of Delta Junction, Dot Lake, Northway, Tanacross, and Tok.

e Other subsistence permits include residents from the communities of Anchorage, Gakona, Manley, Minto, Nenana, Slana, Tanana, and Wasilla.

f Other personal use permits include residents from the communities of Delta Junction, Ester, Fairbanks, Ft. Wainwright, Nenana, North Pole, and Salcha.

g Includes nine households that fished in two different permit areas.



Table 20. Salmon provided for subsistence purposes by test fish programs, Yukon Area, 1999.

Projects by Location	Primary Distribution	Chinook	Summer Chum	Fall Chum	Coho
Big Eddy Test Set and Drift Gill Net Sites	Emmonak	1,165	2,116	1,563	138
Middle Mouth Test Set Gill Net Sites	Kotlik	491	601	2,498	511
Mountain Village Test Drift Gill Net Sites	Mountain Village	1	0	1,008	2
Pilot Station Test Set and Drift Gill Net Sites	Pilot Station	359	1,636	968	180
Marshall Test Drift Gill Net Sites	Marshall	773	181	0	0
Kaltag Test Drift Gill Net Sites	Kaltag	1	0	483	70
Tanana River Tag Deployment Fish Wheel	None	0	0	0	0
Kantishna River Tag Deployment Fish Wheel	None	0	0	0	0
Subtotal a		2,790	4,534	6,520	901
Rampart Rapids Tag Deployment Fish Wheels	Tanana	0	0	175	0
Rampart Tag Recovery Fish Wheel	Rampart	0	0	500	0
Tanana Right (North) Bank Test Fish Wheel	Tanana	0	0	76	0
Tanana Left (South) Bank Test Fish Wheel	Tanana	0	0	5,292	1,499
Nenana Test Fish and Tag Recovery Fish Wheel	Nenana	42	0	16	10
Subtotal b		42	0	6,059	1,509
Total		2,832	4,534	12,579	2,410

a Test fish given away that were not accounted for in subsistence harvest survey or permit methods.

b Test fish given away that were accounted for in subsistence harvest survey or permit methods.

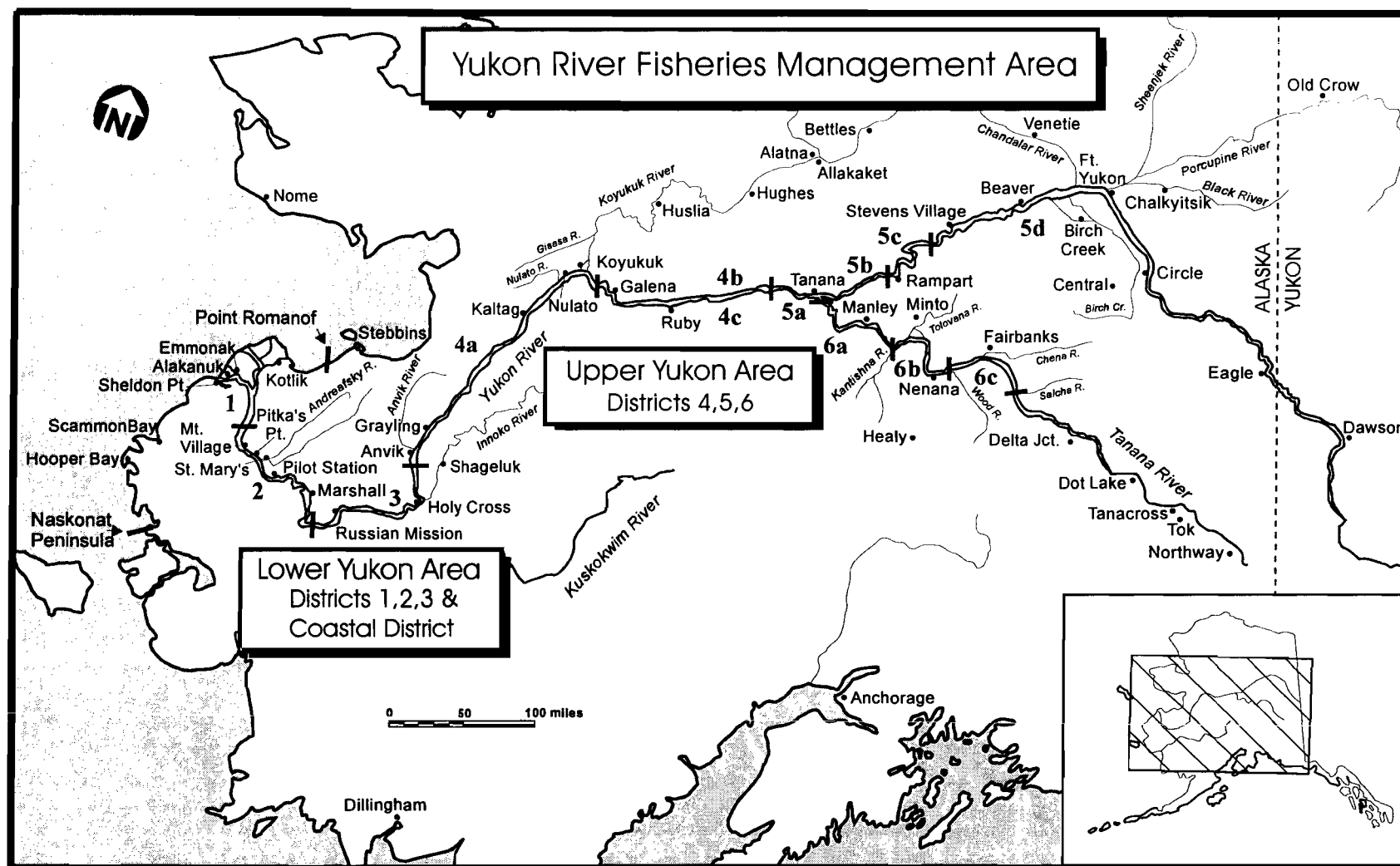


Figure 1. The Yukon Area showing communities and fishing districts, 1999.

5 AAC 99.015 JOINT BOARD NONSUBSISTENCE AREAS. (4) The Fairbanks Nonsubsistence Area is comprised of the following: within Unit 20(A) as defined by 5 AAC 92.450(20)(A) east of the Wood River drainage and south of the Rex trail but including the upper Wood River drainage south of its confluence with Chicken Creek, within Unit 20(B) as defined by 5 AAC 92.450(20)(B) the North Star Borough and that portion of the Washington Creek drainage east of the Elliot Highway, within Unit 20(D) as defined by 5 AAC 92.450(20)(D) west of the Tanana River between its confluence's with the Johnson and Delta Rivers, west of the west bank of the Johnson River, and north and west of the Volkmar drainage, including the Goodpaster River drainage, and within Unit 25(C) as defined by 5 AAC 92.450(25)(C) the Preacher and Beaver Creek drainages.

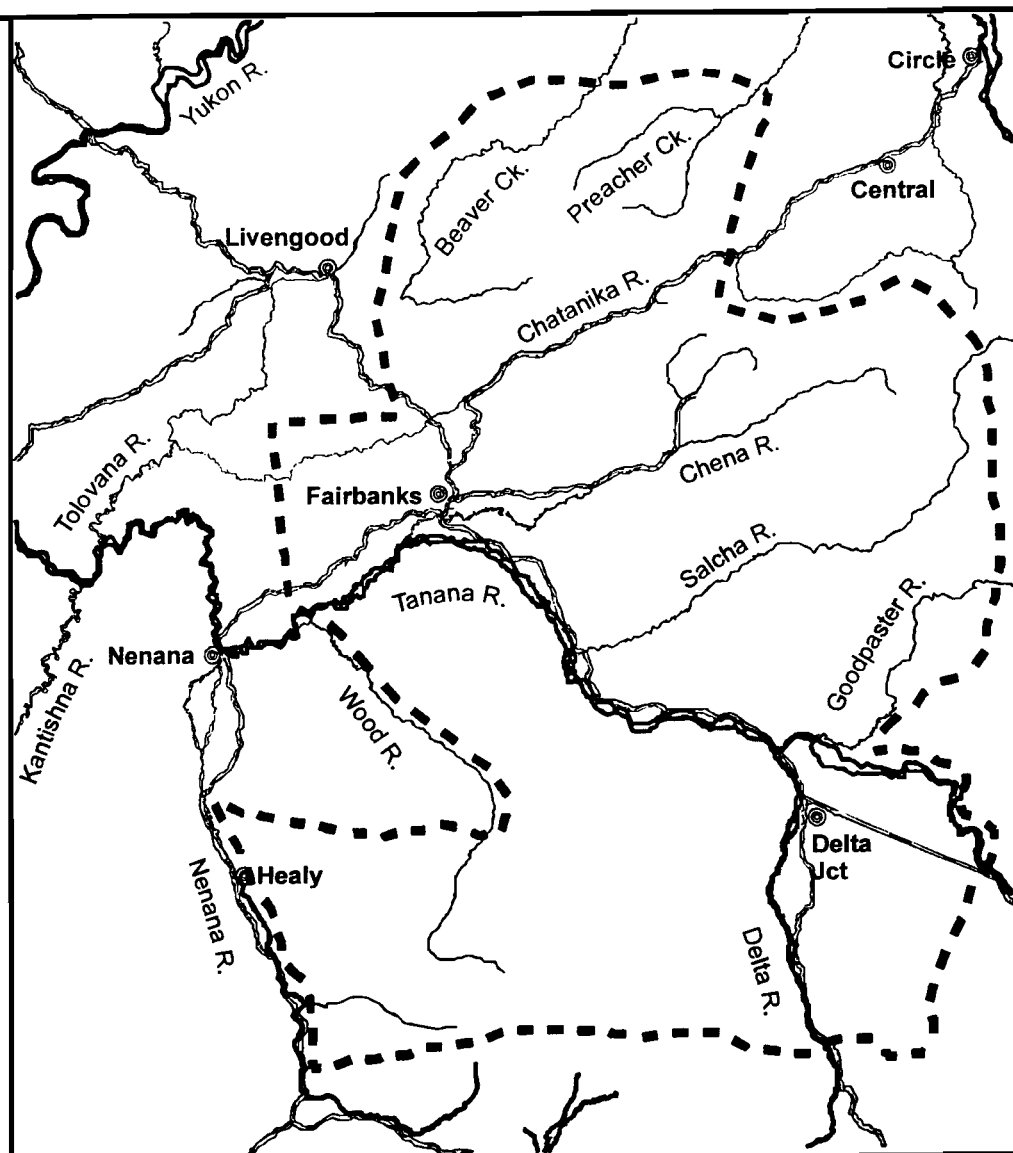
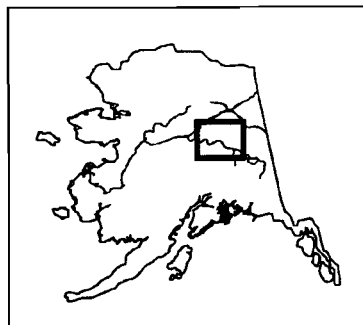


Figure 2. The Fairbanks Nonsubsistence Area, 1999.

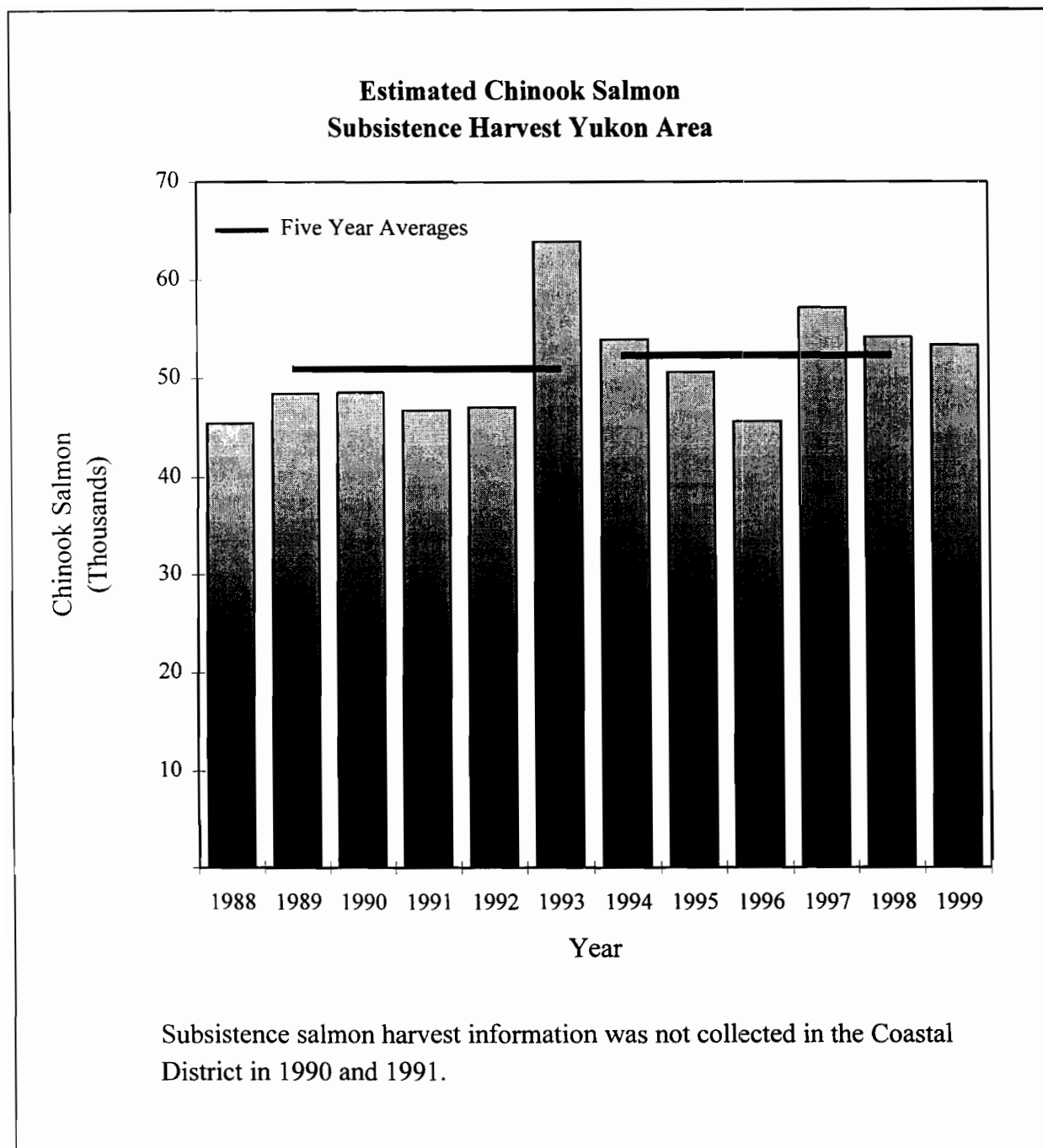
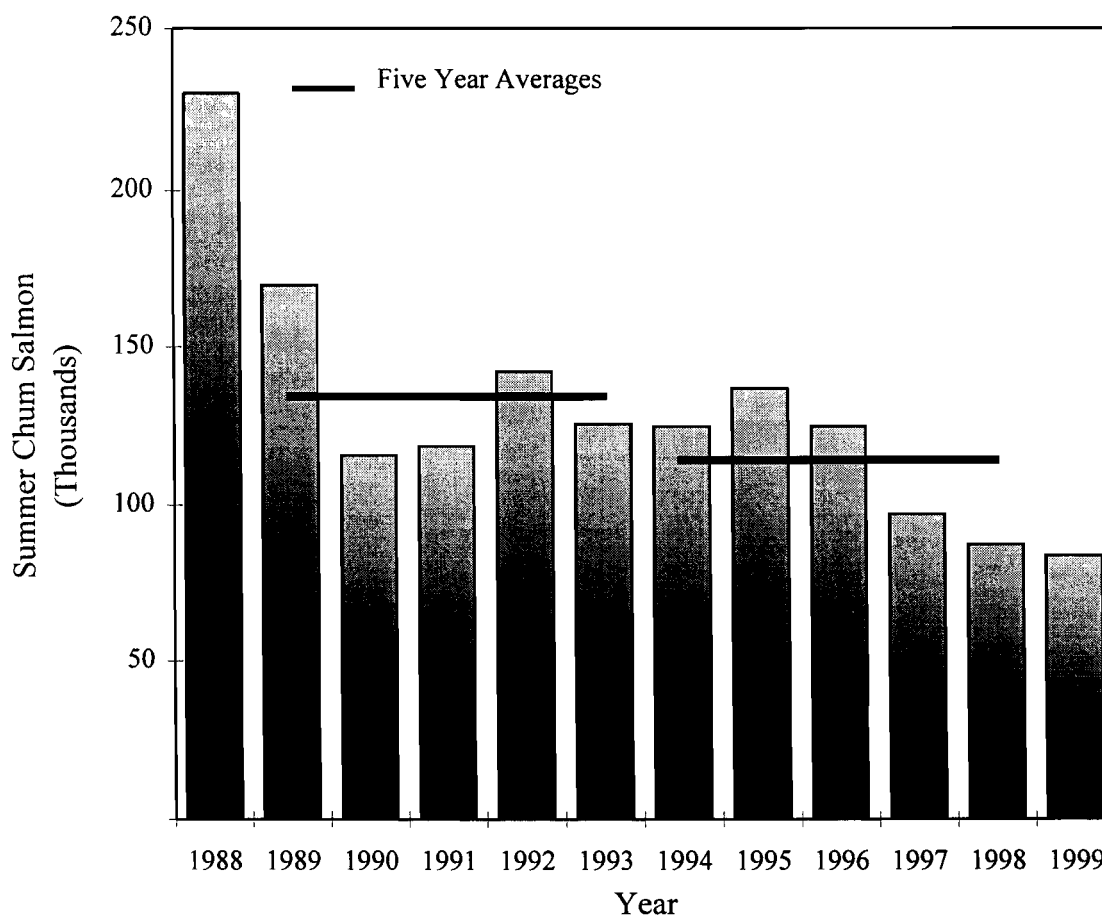


Figure 3. Estimated chinook salmon harvest in the subsistence fishery, Yukon Area, 1988 to 1999.

### Estimated Summer Chum Salmon Subsistence Harvest Yukon Area



Summer chum salmon carcasses retained for subsistence use from the commercial fishery are not included.

Subsistence salmon harvest information was not collected in the Coastal District in 1990 and 1991.

Figure 4. Estimated summer chum salmon harvest in the subsistence fishery, Yukon Area, 1988 to 1999

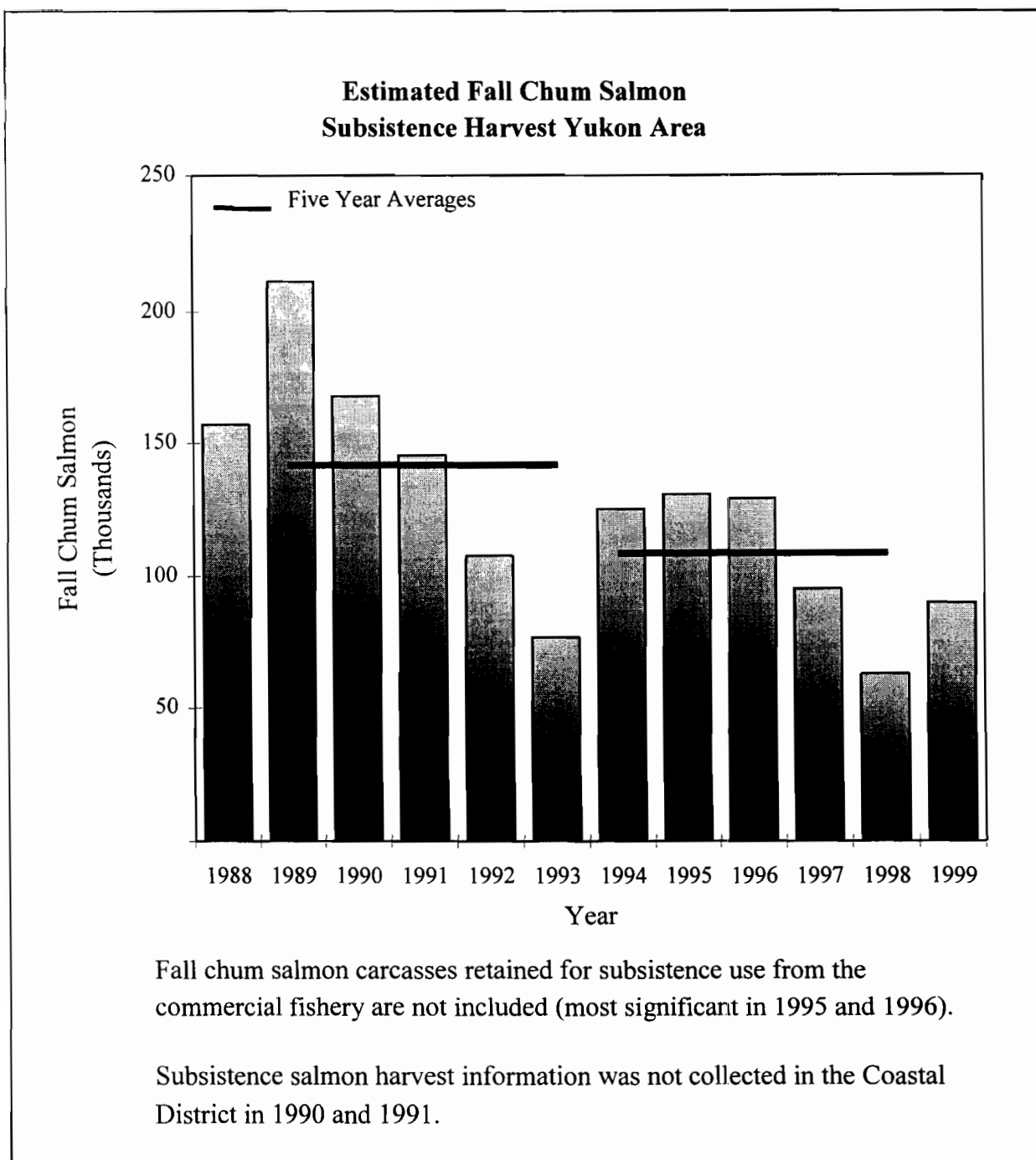
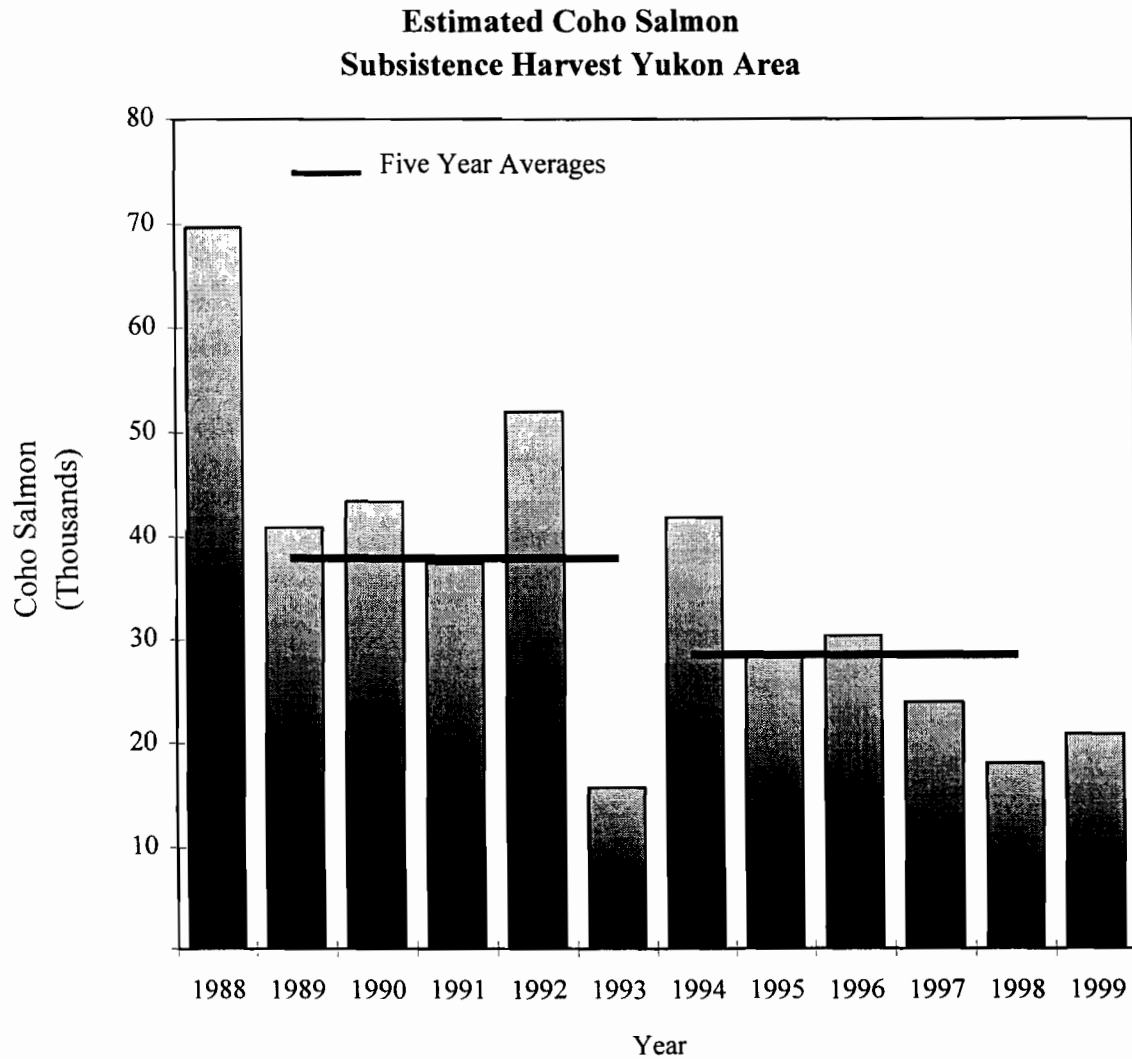


Figure 5. Estimated fall chum salmon harvest in the subsistence fishery, Yukon Area, 1988 to 1999.



Subsistence salmon harvest information was not collected in the Coastal District in 1990 and 1991.

Figure 6. Estimated coho salmon harvest in the subsistence fishery, Yukon Area, 1988 to 1999.

## APPENDIX A

### DETAILED YUKON RIVER SALMON HARVEST ESTIMATES AND RELATED INFORMATION





Appendix A.1. Estimated chinook salmon subsistence harvest by residents of surveyed villages, by harvest stratum, with village and district totals, Yukon Area, 1999. a

Community	Unknown				Does Not Harvest Salmon				Light Harvester				Medium Harvester				Heavy Harvester				Combined				
	N	n	Mean	SE	N	n	Mean	SE	N	n	Mean	SE	N	n	Mean	SE	N	n	Mean	SE	Total		Est		CI(95%)
																					N	n	Total	(+/-)	
Hooper Bay	3	3	0.0	0.0	82	7	0.0	0.0	89	26	1.0	0.2	17	17	3.8	0.0	3	3	5.3	0.0	194	56	173	47	
Scammon Bay	0	0	-	-	23	3	0.0	0.0	51	15	18.4	4.3	2	2	0.0	0.0	0	0	-	-	76	20	938	436	
Coastal District	3	3	0.0	0.0	105	10	0.0	0.0	140	41	7.4	1.6	19	19	3.4	0.0	3	3	5.3	0.0	270	76	1,111	439	
Sheldon's Point	0	0	-	-	7	7	9.4	0.0	21	17	31.2	4.2	7	7	18.9	0.0	0	0	-	-	35	31	855	176	
Alakanuk	7	6	0.0	0.0	38	5	8.8	8.2	72	21	4.8	1.2	11	11	50.5	0.0	0	0	-	-	128	43	1,236	635	
Emmonak	0	0	-	-	64	19	9.5	4.2	77	35	14.8	4.1	15	14	25.9	2.9	1	1	30.0	0.0	157	69	2,172	823	
Kotlik	0	0	-	-	27	5	0.6	0.5	51	14	12.3	4.5	10	10	13.9	0.0	2	2	72.0	0.0	90	31	929	454	
District 1	7	6	0.0	0.0	136	36	7.5	3.0	221	87	12.6	1.8	43	42	28.2	1.0	3	3	58.0	0.0	410	174	5,192	1,148	
Mountain Village	0	0	-	-	41	5	2.0	1.9	90	26	17.6	2.8	19	17	25.7	1.6	1	1	2.0	0.0	151	49	2,161	531	
Pitkas Point	1	1	63.0	0.0	4	4	0.0	0.0	15	15	24.4	0.0	6	5	33.8	4.1	0	0	-	-	26	25	632	49	
St. Mary's	0	0	-	-	45	4	0.0	0.0	56	16	16.2	3.3	14	14	66.5	0.0	3	3	103.0	0.0	118	37	2,150	368	
Pilot Station	1	0	-	-	35	9	10.2	8.6	55	28	30.9	4.1	4	3	74.3	6.6	0	0	-	-	95	40	2,356	740	
Marshall	5	5	29.2	0.0	16	4	6.8	5.9	39	12	30.4	12.0	8	8	70.9	0.0	0	0	-	-	68	29	2,007	935	
District 2	7	6	29.9	0.0	141	26	3.9	2.3	255	97	22.6	2.3	51	47	48.8	0.9	4	4	77.8	0.0	458	180	9,306	1,357	
Russian Mission	0	0	-	-	25	4	8.3	7.6	25	7	79.1	27.3	5	4	83.5	10.1	2	1	60.0	-	57	16	2,722	1,392	
Holy Cross	0	0	-	-	19	5	54.8	27.6	40	20	75.7	15.8	7	7	72.9	0.0	0	0	-	-	66	32	4,581	1,613	
Shageluk	0	0	-	-	9	7	1.4	0.5	10	9	6.4	1.2	7	7	6.3	0.0	6	6	48.5	0.0	32	29	412	25	
District 3	0	0	-	-	53	16	23.8	10.5	75	36	67.6	12.4	19	18	51.1	2.7	8	7	51.4	0.0	155	77	7,715	2,131	
Anvik	0	0	-	-	18	15	0.0	0.0	17	15	18.4	2.9	4	4	115.8	0.0	1	1	0.0	0.0	40	35	776	97	
Grayling	1	1	0.0	0.0	14	4	50.0	20.1	20	6	53.1	11.4	16	16	44.6	0.0	0	0	-	-	51	27	2,476	711	
Kaltag	2	2	95.0	0.0	10	4	19.5	8.8	39	11	29.8	9.2	5	5	92.2	0.0	1	1	41.0	0.0	57	23	2,050	725	
Nulato	4	3	0.0	0.0	46	5	0.0	0.0	40	12	25.8	8.7	9	9	62.9	0.0	1	1	200.0	0.0	100	30	1,799	686	
Koyukuk	0	0	-	-	21	18	2.0	0.5	12	12	15.8	0.0	3	2	15.0	5.8	2	2	114.5	0.0	38	34	506	40	
Galena	1	1	54.0	0.0	107	10	6.0	5.7	62	16	18.8	7.9	10	10	58.1	0.0	3	3	30.7	0.0	183	40	2,539	1,538	
Ruby	3	2	0.0	0.0	47	5	0.0	0.0	15	5	8.0	6.5	3	2	20.0	11.6	5	5	119.4	0.0	73	19	777	204	
Huslia	1	0	-	-	57	6	0.0	0.0	20	6	4.0	3.0	5	4	2.0	0.9	1	1	0.0	0.0	84	17	90	119	
Hughes	0	0	-	-	11	8	2.5	1.0	10	8	6.3	2.5	2	2	4.5	0.0	1	1	5.0	0.0	24	19	105	54	
Allakaket	2	2	0.0	0.0	28	5	0.0	0.0	16	5	0.0	0.0	5	5	15.0	0.0	3	3	11.0	0.0	54	20	108	0	
Alatna	0	0	-	-	8	5	1.0	0.6	3	3	0.0	0.0	1	1	2.0	0.0	0	0	-	-	12	9	10	10	
Bettles	0	0	-	-	15	14	0.0	0.0	4	3	0.0	0.0	1	1	1.0	0.0	0	0	-	-	20	18	1	0	
District 4	14	11	17.4	0.0	362	99	4.2	1.6	258	102	20.1	2.9	64	61	46.7	0.6	18	18	66.5	0.0	736	291	11,237	1,984	
Tanana	1	1	0.0	0.0	74	19	0.0	0.0	26	11	19.5	8.2	8	7	39.7	10.1	13	11	197.1	28.0	122	49	3,388	843	
Rampart	0	0	-	-	11	9	0.0	0.0	3	2	90.0	17.3	14	14	124.9	0.0	1	0	-	-	29	25	2,018	102	
Stevens Village	0	0	-	-	13	8	2.5	1.6	10	6	51.3	14.2	6	5	31.6	9.4	2	2	239.5	0.0	31	21	1,214	302	
Birch Creek	0	0	-	-	9	9	0.0	0.0	5	5	4.8	0.0	0	0	-	-	0	0	-	-	14	14	24	0	
Beaver	0	0	-	-	12	10	0.0	0.0	13	12	18.5	1.9	7	5	33.0	9.3	0	0	-	-	32	27	473	137	
Fort Yukon	0	0	-	-	110	9	0.0	0.0	42	10	13.4	7.1	20	18	91.3	10.0	1	1	150.0	0.0	173	38	2,539	707	
Venetie	0	0	-	-	38	5	0.2	0.2	8	3	4.0	1.6	5	4	17.5	6.8	3	3	0.0	0.0	54	15	127	73	
Chalkyitsik	0	0	-	-	29	29	0.7	0.0	2	2	0.0	0.0	4	3	3.7	1.8	0	0	-	-	35	34	35	14	
District 5	1	1	0.0	0.0	296	98	0.2	0.1	109	51	19.7	3.6	64	56	69.0	3.7	20	17	159.6	18.0	490	223	9,818	1,156	
Survey Totals	32	27	14.2	0.0	1,113	285	4.1	0.9	1,058	414	20.8	1.4	260	243	46.7	1.0	56	52	94.6	6.5	2,519	1,021	44,379	3,628	

a The total number of households (N), the number of households contacted (n), standard error (SE), and includes 95 percent confidence interval, CI (95%). Dashes indicate indefinable values.

Appendix A 2. Estimated summer chum salmon subsistence harvest by residents of surveyed villages, by harvest stratum, with village and district totals, Yukon Area, 1999. a

Community	Unknown				Does Not Harvest Salmon				Light Harvester				Medium Harvester				Heavy Harvester				Combined			
																					Total		Est	CI(95%)
	N	n	Mean	SE	N	n	Mean	SE	N	n	Mean	SE	N	n	Mean	SE	N	n	Mean	SE	N	n	Total	(+/-)
Hooper Bay	3	3	0.0	0.0	82	7	0.0	0.0	89	26	74.8	18.1	17	17	146.4	0.0	3	3	332.3	0.0	194	56	10,146	3,170
Scammon Bay	0	0	-	-	23	3	0.0	0.0	51	15	65.0	16.3	2	2	0.0	0.0	0	0	-	-	76	20	3,315	1,630
<b>Coastal District</b>	3	3	0.0	0.0	105	10	0.0	0.0	140	41	71.3	12.9	19	19	130.9	0.0	3	3	332.3	0.0	270	76	13,461	3,564
Sheldon's Point	0	0	-	-	7	7	16.3	0.0	21	17	41.2	6.0	7	7	51.7	0.0	0	0	-	-	35	31	1,343	247
Alakanuk	7	6	0.0	0.0	38	5	28.0	26.1	72	21	23.7	6.5	11	11	93.9	0.0	0	0	-	-	128	43	3,808	2,153
Emmonak	0	0	-	-	64	19	23.8	10.8	77	35	55.6	9.4	15	14	154.4	11.2	1	1	65.0	0.0	157	69	8,194	1,995
Kotlik	0	0	-	-	27	5	1.0	0.9	51	14	50.0	17.3	10	10	94.7	0.0	2	2	289.5	0.0	90	31	4,107	1,735
<b>District 1</b>	7	6	0.0	0.0	136	36	20.1	8.9	221	87	42.6	5.6	43	42	108.3	3.9	3	3	214.7	0.0	410	174	17,452	3,419
Mountain Village	0	0	-	-	41	5	1.2	1.1	90	26	90.1	21.0	19	17	84.7	5.7	1	1	290.0	0.0	151	49	10,059	3,725
Pitkas Point	1	1	5.0	0.0	4	4	0.0	0.0	15	15	30.3	0.0	6	5	64.8	10.5	0	0	-	-	26	25	849	123
St. Mary's	0	0	-	-	45	4	0.0	0.0	56	16	66.1	17.5	14	14	162.3	0.0	3	3	257.7	0.0	118	37	6,752	1,921
Pilot Station	1	0	-	-	35	9	22.4	19.0	55	28	46.7	9.2	4	3	67.7	16.2	0	0	-	-	95	40	3,629	1,647
Marshall	5	5	0.0	0.0	16	4	5.5	4.8	39	12	15.3	5.5	8	8	43.1	0.0	0	0	-	-	68	29	1,031	447
<b>District 2</b>	7	6	0.7	0.0	141	26	6.5	4.8	255	97	60.6	8.6	51	47	95.8	2.8	4	4	265.8	0.0	458	180	22,320	4,527
Russian Mission	0	0	-	-	25	4	3.8	3.4	25	7	8.4	3.2	5	4	22.3	8.5	2	1	100.0	-	57	16	616	246
Holy Cross	0	0	-	-	19	5	2.0	1.5	40	20	4.1	1.4	7	7	8.6	0.0	0	0	-	-	66	32	264	127
Shageluk	0	0	-	-	9	7	4.7	1.6	10	9	3.5	0.6	7	7	111.7	0.0	6	6	668.0	0.0	32	29	4,868	30
<b>District 3</b>	0	0	-	-	53	16	3.3	1.7	75	36	5.5	1.3	19	18	50.2	2.2	8	7	526.0	0.0	155	77	5,748	278
Anvik	0	0	-	-	18	15	0.0	0.0	17	15	5.6	1.4	4	4	188.0	0.0	1	1	0.0	0.0	40	35	848	47
Grayling	1	1	0.0	0.0	14	4	0.0	0.0	20	6	67.8	41.5	16	16	173.1	0.0	0	0	-	-	51	27	4,126	1,627
Kaltag	2	2	0.0	0.0	10	4	1.3	1.0	39	11	0.7	0.6	5	5	103.6	0.0	1	1	66.0	0.0	57	23	625	51
Nulato	4	3	0.0	0.0	46	5	0.0	0.0	40	12	5.8	2.5	9	9	190.2	0.0	1	1	0.0	0.0	100	30	1,945	200
Koyukuk	0	0	-	-	21	18	0.9	0.4	12	12	0.1	0.0	3	2	10.0	5.8	2	2	72.5	0.0	38	34	197	37
Galena	1	1	1.0	0.0	107	10	0.0	0.0	62	16	5.8	3.3	10	10	52.6	0.0	3	3	267.0	0.0	183	40	1,688	410
Ruby	3	2	0.0	0.0	47	5	0.0	0.0	15	5	0.0	0.0	3	2	2.0	1.2	5	5	338.2	0.0	73	19	1,697	7
Huslia	1	0	-	-	57	6	0.0	0.0	20	6	28.3	13.7	5	4	125.0	55.9	1	1	0.0	0.0	84	17	1,192	768
Hughes	0	0	-	-	11	8	17.6	6.0	10	8	21.6	6.5	2	2	50.0	0.0	1	1	67.0	0.0	24	19	577	183
Allakaket	2	2	0.0	0.0	28	5	0.0	0.0	16	5	0.0	0.0	5	5	154.2	0.0	3	3	491.3	0.0	54	20	2,245	0
Alatna	0	0	-	-	8	5	4.0	2.5	3	3	13.3	0.0	1	1	27.0	0.0	0	0	-	-	12	9	99	38
Bettles	0	0	-	-	15	14	0.0	0.0	4	3	0.0	0.0	1	1	100.0	0.0	0	0	-	-	20	18	100	0
<b>District 4</b>	14	11	0.1	0.0	382	99	0.7	0.2	258	102	11.2	3.5	64	61	124.0	4.4	18	18	235.8	0.0	736	291	15,339	1,867
Tanana	1	1	0.0	0.0	74	19	0.0	0.0	26	11	4.2	2.5	8	7	0.0	0.0	13	11	84.8	16.0	122	49	1,214	430
Rampart	0	0	-	-	11	9	0.0	0.0	3	2	0.5	0.2	14	14	4.1	0.0	1	0	-	-	29	25	60	2
Stevens Village	0	0	-	-	13	8	0.0	0.0	10	6	0.3	0.2	6	5	3.0	1.2	2	2	2.5	0.0	31	21	26	15
Birch Creek	0	0	-	-	9	9	0.0	0.0	5	5	0.0	0.0	0	0	-	-	0	0	-	-	14	14	0	0
Beaver	0	0	-	-	12	10	0.0	0.0	13	12	4.0	1.0	7	5	5.4	2.6	0	0	-	-	32	27	91	45
Fort Yukon	0	0	-	-	110	9	0.0	0.0	42	10	0.0	0.0	20	18	0.0	0.0	1	1	0.0	0.0	173	38	0	0
Venetie	0	0	-	-	38	5	0.0	0.0	8	3	10.0	7.9	5	4	0.0	0.0	3	3	28.7	0.0	54	15	166	124
Chalkyitsik	0	0	-	-	29	29	0.0	0.0	2	2	0.0	0.0	4	3	0.0	0.0	0	0	-	-	35	34	0	0
<b>District 5</b>	1	1	0.0	0.0	296	98	0.0	0.0	109	51	2.3	0.8	64	56	1.8	0.3	20	17	59.7	10.0	490	223	1,557	450
<b>Survey Totals</b>	32	27	0.2	0.0	1,113	285	3.7	1.3	1,058	414	36.3	3.0	260	243	80.9	1.4	56	52	220.5	3.7	2,519	1,021	75,877	6,975

a The total number of households (N), the number of households contacted (n), standard error (SE), and includes 95 percent confidence interval, CI (95%). Dashes indicate indefinable values.

Appendix A.3. Estimated fall chum salmon subsistence harvest by residents of surveyed villages, by harvest stratum, with village and district totals, Yukon Area, 1999. a

Community	Unknown				Does Not Harvest Salmon				Light Harvester				Medium Harvester				Heavy Harvester				Combined			
	N	n	Mean	SE	N	n	Mean	SE	N	n	Mean	SE	N	n	Mean	SE	N	n	Mean	SE	Total		Est	CI(95%)
																					N	n	Total	(+/-)
Hooper Bay	3	3	0.0	0.0	82	7	0.0	0.0	89	26	0.0	0.0	17	17	0.0	0.0	3	3	0.0	0.0	194	56	0	0
Scammon Bay	0	0	-	-	23	3	0.0	0.0	51	15	4.0	2.4	2	2	0.0	0.0	0	0	-	-	76	20	204	243
Coastal District	3	3	0.0	0.0	105	10	0.0	0.0	140	41	1.5	0.8	19	19	0.0	0.0	3	3	0.0	0.0	270	76	204	243
Sheldon's Point	0	0	-	-	7	7	0.0	0.0	21	17	5.4	1.2	7	7	0.0	0.0	0	0	-	-	35	31	115	53
Alakanuk	7	6	0.0	0.0	38	5	0.0	0.0	72	21	1.8	1.4	11	11	38.9	0.0	0	0	-	-	128	43	558	198
Emmonak	0	0	-	-	64	19	2.3	1.8	77	35	1.7	0.6	15	14	0.3	0.1	1	1	0.0	0.0	157	69	286	245
Kotlik	0	0	-	-	27	5	0.0	0.0	51	14	20.5	9.3	10	10	21.0	0.0	2	2	113.0	0.0	90	31	1,482	937
District 1	7	6	0.0	0.0	136	36	1.1	0.8	221	87	6.5	2.2	43	42	14.9	0.0	3	3	75.3	0.0	410	174	2,441	990
Mountain Village	0	0	-	-	41	5	0.6	0.6	90	26	8.8	2.9	19	17	7.4	1.5	1	1	0.0	0.0	151	49	960	522
Pitkas Point	1	1	0.0	0.0	4	4	0.0	0.0	15	15	2.4	0.0	6	5	2.6	0.7	0	0	-	-	26	25	53	8
St. Mary's	0	0	-	-	45	4	0.0	0.0	56	16	7.1	5.2	14	14	18.6	0.0	3	3	19.3	0.0	118	37	722	577
Pilot Station	1	0	-	-	35	9	0.0	0.0	55	28	3.3	1.2	4	3	0.0	0.0	0	0	-	-	95	40	187	137
Marshall	5	5	8.2	0.0	16	4	3.0	2.6	39	12	13.0	7.3	8	8	12.1	0.0	0	0	-	-	68	29	696	571
District 2	7	6	5.9	0.0	141	26	0.5	0.3	255	97	7.6	1.9	51	47	10.1	0.6	4	4	14.5	0.0	458	180	2,618	975
Russian Mission	0	0	-	-	25	4	0.0	0.0	25	7	0.0	0.0	5	4	0.0	0.0	2	1	50.0	-	57	16	100	0
Holy Cross	0	0	-	-	19	5	0.0	0.0	40	20	1.4	1.0	7	7	25.9	0.0	0	0	-	-	66	32	239	80
Shageluk	0	0	-	-	9	7	0.4	0.2	10	9	0.2	0.0	7	7	1.4	0.0	6	6	10.0	0.0	32	29	76	4
District 3	0	0	-	-	53	16	0.1	0.0	75	36	0.8	0.5	19	18	10.1	0.0	8	7	20.0	0.0	155	77	415	80
Anvik	0	0	-	-	18	15	1.6	0.7	17	15	1.5	0.4	4	4	17.8	0.0	1	1	0.0	0.0	40	35	126	28
Grayling	1	1	0.0	0.0	14	4	15.0	10.1	20	6	31.3	13.5	16	16	33.3	0.0	0	0	-	-	51	27	1,370	598
Kaltag	2	2	0.0	0.0	10	4	2.5	1.9	39	11	1.3	1.1	5	5	40.6	0.0	1	1	0.0	0.0	57	23	281	96
Nulato	4	3	0.0	0.0	46	5	30.0	28.3	40	12	15.0	9.8	9	9	39.8	0.0	1	1	0.0	0.0	100	30	2,338	2,668
Koyukuk	0	0	-	-	21	18	6.4	1.3	12	12	11.0	0.0	3	2	0.0	0.0	2	2	639.0	0.0	38	34	1,544	55
Galena	1	1	10.0	0.0	107	10	0.0	0.0	62	16	11.0	5.5	10	10	76.2	0.0	3	3	159.3	0.0	183	40	1,932	679
Ruby	3	2	0.0	0.0	47	5	0.0	0.0	15	5	15.0	12.2	3	2	0.0	0.0	5	5	136.4	0.0	73	19	907	360
Huslia	1	0	-	-	57	6	0.0	0.0	20	6	3.8	2.7	5	4	2.5	1.1	1	1	0.0	0.0	84	17	89	108
Hughes	0	0	-	-	11	8	3.4	1.2	10	8	2.1	0.8	2	2	4.5	0.0	1	1	17.0	0.0	24	19	84	31
Allakaket	2	2	0.0	0.0	28	5	0.0	0.0	16	5	0.0	0.0	5	5	0.0	0.0	3	3	6.7	0.0	54	20	20	0
Alatna	0	0	-	-	8	5	0.0	0.0	3	3	0.0	0.0	1	1	0.0	0.0	0	0	-	-	12	9	0	0
Bettles	0	0	-	-	15	14	0.0	0.0	4	3	0.0	0.0	1	1	0.0	0.0	0	0	-	-	20	18	0	0
District 4	14	11	0.7	0.0	382	99	4.8	3.4	258	102	9.5	2.4	64	61	30.4	0.1	18	18	137.5	0.0	736	291	8,691	2,844
Tanana	1	1	0.0	0.0	74	19	0.0	0.0	26	11	5.0	3.4	8	7	218.3	65.5	13	11	1571.3	151.9	122	49	22,305	4,010
Rampart	0	0	-	-	11	9	0.0	0.0	3	2	0.0	0.0	14	14	308.9	0.0	1	0	-	-	29	25	4,324	0
Stevens Village	0	0	-	-	13	8	0.0	0.0	10	6	0.0	0.0	6	5	0.0	0.0	2	2	10.0	0.0	31	21	20	0
Birch Creek	0	0	-	-	9	9	0.0	0.0	5	5	0.0	0.0	0	0	-	-	0	0	-	-	14	14	0	0
Beaver	0	0	-	-	12	10	0.0	0.0	13	12	0.1	0.0	7	5	2.0	1.1	0	0	-	-	32	27	16	15
Fort Yukon	0	0	-	-	110	9	0.0	0.0	42	10	120.0	104.7	20	18	221.8	22.5	1	1	225.0	0.0	173	38	9,702	8,668
Venetie	0	0	-	-	38	5	13.0	12.1	8	3	22.0	17.3	5	4	41.5	11.2	3	3	377.7	0.0	54	15	2,011	949
Chalkyitsik	0	0	-	-	29	29	4.0	0.0	2	2	2.5	0.0	4	3	80.0	30.6	0	0	-	-	35	34	442	240
District 5	1	1	0.0	0.0	296	98	2.1	1.6	109	51	49.1	40.3	64	56	172.6	11.0	20	17	1090.2	99.0	490	223	38,820	9,600
Survey Totals	32	27	1.6	0.0	1,113	285	2.4	1.3	1,058	414	10.8	4.2	260	243	55.2	2.7	56	52	441.5	35.2	2,519	1,021	53,189	10,112

a The total number of households (N), the number of households contacted (n), standard error (SE), and includes 95 percent confidence interval, CI (95%). Dashes indicate indefinable values.

Appendix A.4 Estimated coho salmon subsistence harvest by residents of surveyed villages, by harvest stratum, with village and district totals, Yukon Area, 1999. a

Community	Unknown				Does Not Harvest Salmon				Light Harvester				Medium Harvester				Heavy Harvester				Combined			
																					Total		Est	CI(95%)
	N	n	Mean	SE	N	n	Mean	SE	N	n	Mean	SE	N	n	Mean	SE	N	n	Mean	SE	N	n	Total	(+/-)
Hooper Bay	3	3	0.0	0.0	82	7	0.0	0.0	89	26	0.7	0.6	17	17	0.0	0.0	3	3	0.0	0.0	194	56	68	113
Scammon Bay	0	0	-	-	23	3	0.0	0.0	51	15	0.0	0.0	2	2	0.0	0.0	0	0	-	-	76	20	0	0
<b>Coastal District</b>	3	3	0.0	0.0	105	10	0.0	0.0	140	41	0.5	0.4	19	19	0.0	0.0	3	3	0.0	0.0	270	76	68	113
Sheldon's Point	0	0	-	-	7	7	0.0	0.0	21	17	2.4	0.6	7	7	0.0	0.0	0	0	-	-	35	31	51	28
Alakanuk	7	6	0.0	0.0	38	5	0.0	0.0	72	21	0.1	0.0	11	11	8.9	0.0	0	0	-	-	128	43	108	12
Emmonak	0	0	-	-	64	19	3.1	2.5	77	35	2.4	0.9	15	14	0.1	0.0	1	1	0.0	0.0	157	69	387	338
Kotlik	0	0	-	-	27	5	0.0	0.0	51	14	3.7	2.4	10	10	19.0	0.0	2	2	76.0	0.0	90	31	535	245
<b>District 1</b>	7	6	0.0	0.0	136	36	1.4	1.2	221	87	2.0	0.6	43	42	6.7	0.0	3	3	50.7	0.0	410	174	1,081	419
Mountain Village	0	0	-	-	41	5	0.2	0.2	90	26	3.1	1.3	19	17	19.7	4.8	1	1	0.0	0.0	151	49	663	302
Pitkas Point	1	1	0.0	0.0	4	4	0.0	0.0	15	15	4.6	0.0	6	5	38.8	15.4	0	0	-	-	26	25	302	182
St. Mary's	0	0	-	-	45	4	0.0	0.0	56	16	9.3	5.2	14	14	1.0	0.0	3	3	0.0	0.0	118	37	536	580
Pilot Station	1	0	-	-	35	9	0.0	0.0	55	28	1.2	0.6	4	3	0.0	0.0	0	0	-	-	95	40	69	66
Marshall	5	5	0.0	0.0	16	4	37.5	32.5	39	12	9.0	6.9	8	8	11.3	0.0	0	0	-	-	68	29	1,041	1,147
<b>District 2</b>	7	6	0.0	0.0	141	26	4.3	3.7	255	97	5.1	1.6	51	47	13.9	2.5	4	4	0.0	0.0	458	180	2,611	1,334
Russian Mission	0	0	-	-	25	4	0.0	0.0	25	7	1.2	1.0	5	4	30.0	13.4	2	1	180.0	-	57	16	542	142
Holy Cross	0	0	-	-	19	5	0.0	0.0	40	20	0.0	0.0	7	7	8.6	0.0	0	0	-	-	66	32	62	3
Shageluk	0	0	-	-	9	7	0.4	0.2	10	9	0.2	0.0	7	7	0.0	0.0	6	6	0.0	0.0	32	29	6	4
<b>District 3</b>	0	0	-	-	53	16	0.1	0.0	75	36	0.5	0.3	19	18	11.1	3.5	8	7	45.0	0.0	155	77	610	142
Anvik	0	0	-	-	18	15	0.0	0.0	17	15	3.6	1.0	4	4	55.3	0.0	1	1	0.0	0.0	40	35	282	36
Grayling	1	1	0.0	0.0	14	4	1.3	1.1	20	6	5.6	3.9	16	16	4.4	0.0	0	0	-	-	51	27	201	158
Kaltag	2	2	0.0	0.0	10	4	0.0	0.0	39	11	0.0	0.0	5	5	52.6	0.0	1	1	0.0	0.0	57	23	263	0
Nulato	4	3	0.0	0.0	46	5	0.0	0.0	40	12	1.7	1.4	9	9	0.0	0.0	1	1	100.0	0.0	100	30	170	115
Koyukuk	0	0	-	-	21	18	0.0	0.0	12	12	2.5	0.0	3	2	0.0	0.0	2	2	132.5	0.0	38	34	295	0
Galena	1	1	0.0	0.0	107	10	0.0	0.0	62	16	0.1	0.1	10	10	5.0	0.0	3	3	21.7	0.0	183	40	123	13
Ruby	3	2	0.0	0.0	47	5	0.0	0.0	15	5	0.0	0.0	3	2	0.0	0.0	5	5	124.0	0.0	73	19	620	0
Huslia	1	0	-	-	57	6	0.0	0.0	20	6	0.3	0.2	5	4	1.8	0.8	1	1	0.0	0.0	84	17	15	13
Hughes	0	0	-	-	11	8	0.1	0.1	10	8	0.1	0.0	2	2	3.0	0.0	1	1	1.0	0.0	24	19	10	2
Allakaket	2	2	0.0	0.0	28	5	0.0	0.0	16	5	0.0	0.0	5	5	0.0	0.0	3	3	0.0	0.0	54	20	0	0
Alatna	0	0	-	-	8	5	0.0	0.0	3	3	0.0	0.0	1	1	0.0	0.0	0	0	-	-	12	9	0	0
Bettles	0	0	-	-	15	14	0.0	0.0	4	3	0.0	0.0	1	1	0.0	0.0	0	0	-	-	20	18	0	0
<b>District 4</b>	14	11	0.0	0.0	382	99	0.0	0.0	258	102	1.1	0.3	64	61	9.7	0.1	18	18	58.4	0.0	736	291	1,979	199
Tanana	1	1	0.0	0.0	74	19	0.0	0.0	26	11	9.0	4.7	8	7	77.1	22.0	13	11	241.2	56.9	122	49	3,989	1,511
Rampart	0	0	-	-	11	9	0.0	0.0	3	2	0.0	0.0	14	14	9.0	0.0	1	0	-	-	29	25	126	0
Stevens Village	0	0	-	-	13	8	0.0	0.0	10	6	0.0	0.0	6	5	0.0	0.0	2	2	0.0	0.0	31	21	0	0
Birch Creek	0	0	-	-	9	9	0.0	0.0	5	5	0.0	0.0	0	0	-	-	0	0	-	-	14	14	0	0
Beaver	0	0	-	-	12	10	0.0	0.0	13	12	0.0	0.0	7	5	0.0	0.0	0	0	-	-	32	27	0	0
Fort Yukon	0	0	-	-	110	9	0.0	0.0	42	10	0.0	0.0	20	18	6.2	1.8	1	1	0.0	0.0	173	38	124	69
Venetie	0	0	-	-	38	5	0.0	0.0	8	3	0.0	0.0	5	4	0.0	0.0	3	3	0.0	0.0	54	15	0	0
Chalkyitsik	0	0	-	-	29	29	0.0	0.0	2	2	0.0	0.0	4	3	0.0	0.0	0	0	-	-	35	34	0	0
<b>District 5</b>	1	1	0.0	0.0	296	98	0.0	0.0	109	51	2.2	1.1	64	56	13.6	2.8	20	17	156.8	37.0	490	223	4,239	1,513
<b>Survey Totals</b>	32	27	0.0	0.0	1,113	285	0.7	0.5	1,058	414	2.2	0.4	260	243	10.4	0.9	56	52	83.9	13.2	2,519	1,021	10,588	2,078

a The total number of households (N), the number of households contacted (n), standard error (SE), and includes 95 percent confidence interval, CI (95%). Dashes indicate indefinable values.

Appendix A 5 Estimated chinook salmon subsistence use by residents of surveyed villages, by harvest stratum, with village and district totals, Yukon Area, 1999. a

Community	Unknown				Does Not Harvest Salmon				Light Harvester				Medium Harvester				Heavy Harvester				Combined			
																					Total		Est	
	N	n	Mean	SE	N	n	Mean	SE	N	n	Mean	SE	N	n	Mean	SE	N	n	Mean	SE	N	n	Total	CI(95%)
Hooper Bay	3	3	0.0	0.0	82	7	0.7	0.5	89	26	1.9	0.4	17	17	3.1	0.0	3	3	5.3	0.0	194	56	301	104
Scammon Bay	0	0	-	-	23	3	7.0	4.8	51	15	14.4	4.1	2	2	1.5	0.0	0	0	-	-	76	20	898	466
<b>Coastal District</b>	3	3	0.0	0.0	105	10	2.1	1.1	140	41	6.5	1.5	19	19	2.9	0.0	3	3	5.3	0.0	270	76	1,199	477
Sheldon's Point	0	0	-	-	7	7	9.7	0.0	21	17	27.2	3.3	7	7	37.7	0.0	0	0	-	-	35	31	904	136
Alakanuk	7	6	0.0	0.0	38	5	4.2	2.9	72	21	5.2	1.1	11	11	49.5	0.0	0	0	-	-	128	43	1,081	272
Emmonak	0	0	-	-	64	19	13.2	4.3	77	35	14.7	2.1	15	14	13.6	1.3	1	1	10.0	0.0	157	69	2,194	631
Kotlik	0	0	-	-	27	5	0.6	0.5	51	14	6.8	2.7	10	10	13.9	0.0	2	2	107.0	0.0	90	31	719	276
<b>District 1</b>	7	6	0.0	0.0	136	36	8.0	2.2	221	87	11.0	1.1	43	42	26.8	0.5	3	3	74.7	0.0	410	174	4,998	753
Mountain Village	0	0	-	-	41	5	1.4	0.9	90	26	16.2	3.1	19	17	21.4	1.4	1	1	2.0	0.0	151	49	1,930	555
Pitkas Point	1	1	50.0	0.0	4	4	1.8	0.0	15	15	27.3	0.0	6	5	31.2	4.5	0	0	-	-	26	25	654	53
St. Mary's	0	0	-	-	45	4	1.5	1.4	56	15	12.0	3.2	14	13	56.2	2.8	3	3	103.0	0.0	118	35	1,836	385
Pilot Station	1	0	-	-	35	9	36.2	28.4	55	28	29.7	3.9	4	3	70.3	8.6	0	0	-	-	95	40	3,187	1,998
Marshall	5	5	9.4	0.0	16	4	20.5	8.0	39	12	44.0	11.5	8	8	79.3	0.0	0	0	-	-	68	29	2,725	920
<b>District 2</b>	7	6	13.9	0.0	141	26	12.3	7.1	255	96	23.1	2.3	51	46	45.0	1.3	4	4	77.8	0.0	458	178	10,332	2,301
Russian Mission	0	0	-	-	25	4	18.8	6.2	25	7	68.1	25.2	5	4	77.8	9.5	2	1	60.0	-	57	16	2,681	1,278
Holy Cross	0	0	-	-	19	5	57.2	26.8	40	20	66.4	12.7	7	7	48.3	0.0	0	0	-	-	66	32	4,081	1,412
Shageluk	0	0	-	-	9	7	3.9	1.0	10	9	12.4	1.3	7	7	7.7	0.0	6	6	46.5	0.0	32	29	492	31
<b>District 3</b>	0	0	-	-	53	16	30.0	10.0	75	36	59.8	10.8	19	18	41.1	2.5	8	7	49.9	0.0	155	77	7,254	1,905
Anvik	0	0	-	-	18	14	6.1	1.4	17	15	18.4	1.8	4	4	94.0	0.0	1	1	0.0	0.0	40	34	799	78
Grayling	1	1	10.0	0.0	14	4	38.8	15.7	20	6	54.0	9.7	16	16	39.4	0.0	0	0	-	-	51	27	2,264	575
Kaltag	2	2	80.0	0.0	10	4	20.5	6.8	39	11	35.8	7.3	5	5	84.2	0.0	1	1	31.0	0.0	57	23	2,214	574
Nulato	4	3	1.3	0.7	46	5	0.2	0.2	40	12	23.4	6.5	9	9	47.3	0.0	1	1	200.0	0.0	100	30	1,577	515
Koyukuk	0	0	-	-	21	18	3.6	0.5	12	12	11.6	0.0	3	2	20.0	8.7	2	2	80.5	0.0	38	34	436	56
Galena	1	1	48.0	0.0	107	9	7.8	4.9	62	16	15.0	5.1	10	10	46.6	0.0	3	3	7.3	0.0	183	39	2,302	1,208
Ruby	3	2	0.5	0.3	47	5	12.2	7.7	15	5	8.2	6.4	3	2	25.0	14.4	5	5	91.2	0.0	73	19	1,229	742
Huslia	1	0	-	-	57	6	0.5	0.5	20	6	5.3	1.7	5	4	4.0	1.1	1	1	0.0	0.0	84	17	155	86
Hughes	0	0	-	-	11	8	1.0	0.4	10	8	7.3	2.5	2	2	4.5	0.0	1	1	5.0	0.0	24	19	99	50
Allakaket	2	2	1.5	0.0	28	5	0.0	0.0	16	5	3.2	2.4	5	5	15.0	0.0	3	3	11.0	0.0	54	20	162	77
Alatna	0	0	-	-	8	5	1.8	1.0	3	3	0.3	0.0	1	1	2.0	0.0	0	0	-	-	12	9	17	15
Bettles	0	0	-	-	15	14	0.0	0.0	4	3	0.3	0.1	1	1	1.0	0.0	0	0	-	-	20	18	2	1
<b>District 4</b>	14	11	16.3	0.2	382	97	6.3	1.8	258	102	20.0	2.1	64	61	40.0	0.8	18	18	50.4	0.0	736	289	11,256	1,721
Tanana	1	1	0.0	0.0	74	18	2.0	0.9	26	11	14.2	5.7	8	7	42.7	9.5	13	11	72.3	6.5	122	48	1,800	389
Rampart	0	0	-	-	11	9	6.2	1.4	3	1	40.0	-	14	14	100.9	0.0	1	0	-	-	29	24	1,600	30
Stevens Village	0	0	-	-	13	7	6.0	1.8	10	6	51.3	14.2	6	3	8.7	4.0	2	2	239.5	0.0	31	18	1,122	287
Birch Creek	0	0	-	-	9	8	6.1	1.5	5	5	7.2	0.0	0	0	-	-	0	0	-	-	14	13	91	27
Beaver	0	0	-	-	12	9	0.8	0.2	13	12	17.0	1.8	7	5	10.4	1.8	0	0	-	-	32	26	304	54
Fort Yukon	0	0	-	-	110	9	3.6	2.0	42	9	6.7	3.8	20	18	45.8	3.6	1	1	150.0	0.0	173	37	1,742	557
Venetie	0	0	-	-	38	5	2.4	1.6	8	3	4.0	1.6	5	3	21.0	13.3	3	3	2.7	0.0	54	14	236	177
Chalkyitsik	0	0	-	-	29	26	1.3	0.2	2	2	0.0	0.0	4	3	1.0	0.5	0	0	-	-	35	31	43	9
<b>District 5</b>	1	1	0.0	0.0	296	91	3.0	0.8	109	49	14.5	2.4	64	53	45.4	2.0	20	17	78.8	4.0	490	211	6,938	761
<b>Survey Totals</b>	32	27	10.2	0.1	1,113	276	7.1	1.2	1,058	411	19.3	1.1	260	239	37.5	0.6	56	52	61.3	1.5	2,519	1,005	41,877	3,641

a The total number of households (N), the number of households contacted (n), standard error (SE), and includes 95 percent confidence interval, CI (95%). Dashes indicate indefinable values.

Appendix A 6 Estimated summer chum salmon subsistence use by residents of surveyed villages, by harvest stratum, with village and district totals, Yukon Area, 1999 a

Community	Unknown				Does Not Harvest Salmon				Light Harvester				Medium Harvester				Heavy Harvester				Combined				
	N	n	Mean	SE	N	n	Mean	SE	N	n	Mean	SE	N	n	Mean	SE	N	n	Mean	SE	Total		Est		CI(95%)
																					N	n	Total	(+/-)	
Hooper Bay	3	3	13.3	0.0	82	7	12.7	5.5	89	26	71.7	9.2	17	17	105.9	0.0	3	3	249.0	0.0	194	56	10,017	1,845	
Scammon Bay	0	0	-	-	23	3	49.0	26.1	51	15	56.0	17.0	2	2	31.0	0.0	0	0	-	-	76	20	4,048	2,069	
Coastal District	3	3	13.3	0.0	105	10	20.7	7.2	140	41	66.0	8.5	19	19	98.0	0.0	3	3	249.0	0.0	270	76	14,065	2,772	
Sheldon's Point	0	0	-	-	7	7	15.6	0.0	21	17	39.5	4.4	7	7	67.1	0.0	0	0	-	-	35	31	1,409	184	
Alakanuk	7	6	11.5	3.7	38	5	14.0	5.7	72	21	21.4	3.9	11	11	88.6	0.0	0	0	-	-	128	43	3,134	702	
Emmonak	0	0	-	-	64	19	45.1	12.1	77	35	70.0	9.9	15	14	139.3	9.7	1	1	20.0	0.0	157	69	10,383	2,151	
Kotlik	0	0	-	-	27	5	1.6	0.9	51	14	44.7	12.8	10	10	87.2	0.0	2	2	300.5	0.0	90	31	3,797	1,287	
District 1	7	6	11.5	3.7	136	36	26.2	5.9	221	87	45.5	4.7	43	42	102.5	3.4	3	3	207.0	0.0	410	174	18,723	2,609	
Mountain Village	0	0	-	-	41	5	4.2	2.8	90	26	85.3	21.2	19	17	84.2	5.1	1	1	290.0	0.0	151	49	9,744	3,763	
Pitkas Point	1	1	4.0	0.0	4	4	8.0	0.0	15	15	35.1	0.0	6	5	61.8	11.1	0	0	-	-	26	25	934	130	
St. Mary's	0	0	-	-	45	4	8.0	7.0	56	15	45.8	14.0	14	13	127.7	7.8	3	3	257.7	0.0	118	35	5,489	1,674	
Pilot Station	1	0	-	-	35	9	14.4	7.5	55	28	48.8	8.4	4	3	67.7	16.2	0	0	-	-	95	40	3,465	1,052	
Marshall	5	5	1.4	0.0	16	4	8.8	3.1	39	12	19.8	4.8	8	8	52.0	0.0	0	0	-	-	68	29	1,337	384	
District 2	7	6	1.6	0.0	141	26	8.6	3.0	255	96	55.8	8.3	51	46	87.2	3.4	4	4	265.8	0.0	458	178	20,969	4,270	
Russian Mission	0	0	-	-	25	4	3.8	3.4	25	7	5.7	2.7	5	4	22.0	8.5	2	1	100.0	-	57	16	547	231	
Holy Cross	0	0	-	-	19	5	2.2	1.7	40	20	4.9	1.5	7	7	5.9	0.0	0	0	-	-	66	32	281	135	
Shageluk	0	0	-	-	9	7	6.9	1.9	10	9	10.0	0.9	7	7	104.6	0.0	6	6	656.7	0.0	32	29	4,834	37	
District 3	0	0	-	-	53	16	3.7	1.8	75	36	5.9	1.2	19	18	46.5	2.2	8	7	517.5	0.0	155	77	5,662	270	
Anvik	0	0	-	-	18	14	0.0	0.0	17	15	2.0	0.4	4	4	134.0	0.0	1	1	0.0	0.0	40	34	570	15	
Grayling	1	1	0.0	0.0	14	4	25.0	21.1	20	6	67.8	41.5	16	16	123.0	0.0	0	0	-	-	51	27	3,675	1,727	
Kaitag	2	2	0.0	0.0	10	4	1.0	0.8	39	11	0.7	0.6	5	5	103.6	0.0	1	1	66.0	0.0	57	23	622	49	
Nulato	4	3	0.0	0.0	46	5	0.0	0.0	40	12	4.8	1.9	9	9	190.2	0.0	1	1	0.0	0.0	100	30	1,905	155	
Koyukuk	0	0	-	-	21	18	0.0	0.0	12	12	0.1	0.0	3	2	68.5	39.6	2	2	22.5	0.0	38	34	253	233	
Galena	1	1	1.0	0.0	107	9	13.0	9.8	62	16	4.1	3.2	10	10	42.6	0.0	3	3	140.3	0.0	183	39	2,495	2,096	
Ruby	3	2	0.0	0.0	47	5	69.8	66.0	15	5	33.4	27.2	3	2	17.0	9.8	5	5	323.2	0.0	73	19	5,449	6,131	
Huslia	1	0	-	-	57	6	0.0	0.0	20	6	18.3	7.6	5	4	125.0	55.9	1	1	38.0	0.0	84	17	1,030	624	
Hughes	0	0	-	-	11	8	12.5	4.3	10	8	20.1	6.1	2	2	50.0	0.0	1	1	100.0	0.0	24	19	539	151	
Allakaket	2	2	0.0	0.0	28	5	0.0	0.0	16	5	15.6	12.3	5	5	154.2	0.0	3	3	514.7	0.0	54	20	2,565	386	
Alatna	0	0	-	-	8	5	4.0	1.8	3	3	0.0	0.0	1	1	27.0	0.0	0	0	-	-	12	9	59	28	
Bettles	0	0	-	-	15	14	0.0	0.0	4	3	0.0	0.0	1	1	100.0	0.0	0	0	-	-	20	18	100	0	
District 4	14	11	0.1	0.0	382	97	13.6	8.6	258	102	12.4	3.8	64	61	110.0	4.8	18	18	212.8	0.0	736	289	19,262	6,754	
Tanana	1	1	0.0	0.0	74	18	0.0	0.0	26	11	4.2	2.5	8	7	0.0	0.0	13	11	75.7	12.9	122	48	1,096	356	
Rampart	0	0	-	-	11	9	1.1	0.5	3	1	1.0	-	14	14	2.4	0.0	1	0	-	-	29	24	48	10	
Stevens Village	0	0	-	-	13	7	0.0	0.0	10	6	0.3	0.2	6	3	5.0	3.5	2	2	2.5	0.0	31	18	38	42	
Birch Creek	0	0	-	-	9	8	0.0	0.0	5	5	0.0	0.0	0	0	-	-	0	0	-	-	14	13	0	0	
Beaver	0	0	-	-	12	9	0.0	0.0	13	12	3.9	1.0	7	5	5.4	2.6	0	0	-	-	32	26	89	45	
Fort Yukon	0	0	-	-	110	9	0.0	0.0	42	10	0.0	0.0	20	18	0.0	0.0	1	1	0.0	0.0	173	38	0	0	
Venetie	0	0	-	-	38	5	0.0	0.0	8	3	10.0	7.9	5	3	0.0	0.0	3	3	28.7	0.0	54	14	166	124	
Chalkyitsik	0	0	-	-	29	26	0.0	0.0	2	2	0.0	0.0	4	3	0.0	0.0	0	0	-	-	35	31	0	0	
District 5	1	1	0.0	0.0	296	91	0.0	0.0	109	50	2.3	0.8	64	53	1.6	0.4	20	17	53.8	8.0	490	212	1,437	382	
Survey Totals	32	27	4.1	0.8	1,113	276	11.1	3.1	1,058	412	35.4	2.6	260	239	72.1	1.5	56	52	204.9	3.0	2,519	1,006	80,118	8,863	

a Households contacted indicates the number of households with complete numbers of dogs information, includes 95 percent confidence interval, CI (95%) (+/-).

Appendix A 7 Estimated fall chum salmon subsistence use by residents of surveyed villages, by harvest stratum, with village and district totals, Yukon Area, 1999. a

Community	Unknown				Does Not Harvest Salmon				Light Harvester				Medium Harvester				Heavy Harvester				Combined			
																					Total		Est	CI(95%)
	N	n	Mean	SE	N	n	Mean	SE	N	n	Mean	SE	N	n	Mean	SE	N	n	Mean	SE	N	n	Total	(+/-)
Hooper Bay	3	3	0.0	0.0	82	7	0.0	0.0	89	26	0.0	0.0	17	17	0.0	0.0	3	3	0.0	0.0	194	56	0	0
Scammon Bay	0	0	-	-	23	3	0.0	0.0	51	15	2.6	2.2	2	2	0.0	0.0	0	0	-	-	76	20	136	224
<b>Coastal District</b>	3	3	0.0	0.0	105	10	0.0	0.0	140	41	1.0	0.8	19	19	0.0	0.0	3	3	0.0	0.0	270	76	136	224
Sheldon's Point	0	0	-	-	7	7	1.1	0.0	21	17	4.5	1.0	7	7	1.1	0.0	0	0	-	-	35	31	111	41
Alakanuk	7	6	0.0	0.0	38	5	0.0	0.0	72	21	2.2	1.4	11	11	38.9	0.0	0	0	-	-	128	43	593	199
Emmonak	0	0	-	-	64	19	5.8	2.5	77	35	21.0	5.3	15	14	5.7	1.0	1	1	0.0	0.0	157	69	2,075	861
Kolik	0	0	-	-	27	5	0.8	0.7	51	14	17.4	7.2	10	10	11.6	0.0	2	2	113.0	0.0	90	31	1,252	729
<b>District 1</b>	7	6	0.0	0.0	136	36	2.9	1.2	221	87	12.5	2.5	43	42	14.8	0.4	3	3	75.3	0.0	410	174	4,031	1,146
Mountain Village	0	0	-	-	41	5	0.8	0.6	90	26	9.6	2.8	19	17	9.1	1.6	1	1	0.0	0.0	151	49	1,078	502
Pitkas Point	1	1	0.0	0.0	4	4	0.0	0.0	15	15	3.1	0.0	6	5	2.6	0.7	0	0	-	-	26	25	63	8
St. Mary's	0	0	-	-	45	4	0.0	0.0	56	15	1.6	0.8	14	13	16.4	2.6	3	3	19.3	0.0	118	35	381	113
Pilot Station	1	0	-	-	35	9	0.0	0.0	55	28	3.1	1.3	4	3	0.0	0.0	0	0	-	-	95	40	175	142
Marshall	5	5	8.2	0.0	16	4	4.0	2.0	39	12	12.6	5.9	8	8	11.6	0.0	0	0	-	-	68	29	692	461
<b>District 2</b>	7	6	5.9	0.0	141	26	0.7	0.3	255	96	6.6	1.3	51	46	10.0	0.9	4	4	14.5	0.0	458	178	2,389	705
Russian Mission	0	0	-	-	25	4	0.0	0.0	25	7	0.0	0.0	5	4	0.0	0.0	2	1	50.0	-	57	16	100	0
Holy Cross	0	0	-	-	19	5	0.0	0.0	40	20	1.6	1.0	7	7	25.4	0.0	0	0	-	-	66	32	242	80
Shageluk	0	0	-	-	9	7	0.4	0.2	10	9	2.4	0.7	7	7	5.0	0.0	6	6	10.0	0.0	32	29	123	14
<b>District 3</b>	0	0	-	-	53	16	0.1	0.0	75	36	1.2	0.5	19	18	11.2	0.0	8	7	20.0	0.0	155	77	465	82
Anvik	0	0	-	-	18	14	1.7	0.8	17	15	1.6	0.4	4	4	11.5	0.0	1	1	0.0	0.0	40	34	104	32
Grayling	1	1	0.0	0.0	14	4	7.5	4.1	20	6	29.6	13.1	16	16	30.9	0.0	0	0	-	-	51	27	1,193	525
Kaltag	2	2	0.0	0.0	10	4	7.5	2.0	39	11	11.3	4.7	5	5	40.6	0.0	1	1	0.0	0.0	57	23	721	365
Nulato	4	3	0.0	0.0	46	5	26.0	24.6	40	12	10.9	5.3	9	9	32.6	0.0	1	1	0.0	0.0	100	30	1,926	2,253
Koyukuk	0	0	-	-	21	18	5.3	1.1	12	12	12.5	0.0	3	2	17.5	10.1	2	2	480.0	0.0	38	34	1,273	74
Galena	1	1	10.0	0.0	107	9	1.1	1.1	62	16	9.9	4.5	10	10	50.6	0.0	3	3	154.7	0.0	183	39	1,715	591
Ruby	3	2	0.0	0.0	47	5	29.8	25.9	15	5	16.6	11.9	3	2	10.0	5.8	5	5	114.4	0.0	73	19	2,252	2,409
Huslia	1	0	-	-	57	6	0.5	0.5	20	6	5.5	2.7	5	4	13.8	4.0	1	1	0.0	0.0	84	17	207	127
Hughes	0	0	-	-	11	8	4.0	2.1	10	8	2.2	0.9	2	2	4.5	0.0	1	1	17.0	0.0	24	19	93	49
Allakaket	2	2	0.0	0.0	28	5	0.0	0.0	16	5	0.0	0.0	5	5	0.0	0.0	3	3	6.7	0.0	54	20	20	0
Alatna	0	0	-	-	8	5	0.0	0.0	3	3	0.0	0.0	1	1	0.0	0.0	0	0	-	-	12	9	0	0
Bettles	0	0	-	-	15	14	0.1	0.0	4	3	0.0	0.0	1	1	0.0	0.0	0	0	-	-	20	18	2	1
<b>District 4</b>	14	11	0.7	0.0	382	97	8.1	4.4	258	102	10.3	1.9	64	61	26.6	0.6	18	18	112.9	0.0	736	289	9,506	3,415
Tanana	1	1	0.0	0.0	74	18	4.4	1.7	26	11	13.5	4.8	8	7	233.3	64.9	13	11	1638.5	158.7	122	48	23,844	4,186
Rampart	0	0	-	-	11	9	0.0	0.0	3	1	0.0	-	14	14	292.6	0.0	1	0	-	-	29	24	4,096	0
Stevens Village	0	0	-	-	13	7	28.6	19.4	10	6	0.0	0.0	6	3	0.0	0.0	2	2	10.0	0.0	31	18	391	495
Birch Creek	0	0	-	-	9	8	0.4	0.1	5	5	4.0	0.0	0	0	-	-	0	0	-	-	14	13	23	2
Beaver	0	0	-	-	12	9	0.0	0.0	13	12	0.0	0.0	7	5	2.0	1.1	0	0	-	-	32	26	14	15
Fort Yukon	0	0	-	-	110	9	0.9	0.5	42	10	117.5	102.5	20	18	221.8	24.6	1	1	225.0	0.0	173	38	9,694	8,499
Venetie	0	0	-	-	38	5	15.0	11.8	8	3	22.0	17.3	5	3	33.3	21.1	3	3	376.0	0.0	54	14	2,041	942
Chalkyitsik	0	0	-	-	29	26	4.5	1.2	2	2	5.0	0.0	4	3	88.3	29.5	0	0	-	-	35	31	495	241
<b>District 5</b>	1	1	0.0	0.0	296	91	5.1	1.8	109	50	50.4	39.5	64	53	170.8	11.5	20	17	1133.7	103.0	490	212	40,598	9,536
<b>Survey Totals</b>	32	27	1.6	0.0	1,113	276	4.6	1.6	1,058	412	12.1	4.1	260	239	53.8	2.8	56	52	449.1	36.8	2,519	1,006	57,125	10,221

a Households contacted indicates the number of households with complete numbers of dogs information, includes 95 percent confidence interval, CI (95%) (+/-). Dashes indicate indefinable values.



Appendix A.8 Estimated coho salmon subsistence use by residents of surveyed villages, by harvest stratum, with village and district totals, Yukon Area, 1999 a

Community	Unknown				Does Not Harvest Salmon				Light Harvester				Medium Harvester				Heavy Harvester				Combined			
	N	n	Mean	SE	N	n	Mean	SE	N	n	Mean	SE	N	n	Mean	SE	N	n	Mean	SE	Total		Est	CI(95%)
																					N	n	Total	(+/-)
Hooper Bay	3	3	0.0	0.0	82	7	0.0	0.0	89	26	0.7	0.6	17	17	0.0	0.0	3	3	0.0	0.0	194	56	68	113
Scammon Bay	0	0	-	-	23	3	0.0	0.0	51	15	0.0	0.0	2	2	0.0	0.0	0	0	-	-	76	20	0	0
Coastal District	3	3	0.0	0.0	105	10	0.0	0.0	140	41	0.5	0.4	19	19	0.0	0.0	3	3	0.0	0.0	270	76	68	113
Sheldon's Point	0	0	-	-	7	7	0.0	0.0	21	17	2.2	0.5	7	7	0.7	0.0	0	0	-	-	35	31	52	21
Alakanuk	7	6	0.0	0.0	38	5	0.8	0.8	72	21	0.3	0.1	11	11	18.3	0.0	0	0	-	-	128	43	259	61
Emmonak	0	0	-	-	64	19	4.5	2.6	77	35	2.4	0.8	15	14	0.9	0.2	1	1	0.0	0.0	157	69	490	349
Kotlik	0	0	-	-	27	5	0.2	0.2	51	14	3.2	2.4	10	10	13.4	0.0	2	2	76.0	0.0	90	31	459	243
District 1	7	6	0.0	0.0	136	36	2.4	1.2	221	87	1.9	0.6	43	42	8.2	0.1	3	3	50.7	0.0	410	174	1,260	430
Mountain Village	0	0	-	-	41	5	1.4	0.7	90	26	3.3	1.3	19	17	20.8	4.8	1	1	0.0	0.0	151	49	754	306
Pitkas Point	1	1	0.0	0.0	4	4	0.8	0.0	15	15	4.0	0.0	6	5	38.8	15.4	0	0	-	-	26	25	296	182
St. Mary's	0	0	-	-	45	4	0.0	0.0	56	15	3.9	1.5	14	13	1.2	0.3	3	3	0.0	0.0	118	35	238	165
Pilot Station	1	0	-	-	35	9	0.2	0.2	55	28	0.9	0.5	4	3	0.0	0.0	0	0	-	-	95	40	59	57
Marshall	5	5	0.0	0.0	16	4	37.5	32.5	39	12	9.5	4.5	8	8	11.3	0.0	0	0	-	-	68	29	1,061	1,077
District 2	7	6	0.0	0.0	141	26	4.7	3.7	255	96	3.9	0.9	51	46	14.4	2.5	4	4	0.0	0.0	458	178	2,408	1,148
Russian Mission	0	0	-	-	25	4	0.0	0.0	25	7	1.2	1.0	5	4	30.0	13.4	2	1	180.0	-	57	16	542	142
Holy Cross	0	0	-	-	19	5	0.0	0.0	40	20	0.0	0.0	7	7	8.6	0.0	0	0	-	-	66	32	62	3
Shageluk	0	0	-	-	9	7	0.4	0.2	10	9	0.2	0.0	7	7	0.0	0.0	6	6	0.0	0.0	32	29	6	4
District 3	0	0	-	-	53	16	0.1	0.0	75	36	0.5	0.3	19	18	11.1	3.5	8	7	45.0	0.0	155	77	610	142
Anvik	0	0	-	-	18	14	0.0	0.0	17	15	4.0	0.9	4	4	27.8	0.0	1	1	0.0	0.0	40	34	179	31
Grayling	1	1	0.0	0.0	14	4	1.3	1.1	20	6	5.6	3.9	16	16	4.4	0.0	0	0	-	-	51	27	201	158
Kaltag	2	2	0.0	0.0	10	4	1.5	1.2	39	11	0.0	0.0	5	5	52.6	0.0	1	1	0.0	0.0	57	23	278	23
Nulato	4	3	0.0	0.0	46	5	0.0	0.0	40	12	1.7	1.4	9	9	0.0	0.0	1	1	100.0	0.0	100	30	170	115
Koyukuk	0	0	-	-	21	18	0.0	0.0	12	12	2.5	0.0	3	2	0.0	0.0	2	2	132.5	0.0	38	34	295	0
Galena	1	1	0.0	0.0	107	9	0.0	0.0	62	16	0.0	0.0	10	10	5.0	0.0	3	3	21.7	0.0	183	39	115	0
Ruby	3	2	0.0	0.0	47	5	0.8	0.8	15	5	0.0	0.0	3	2	0.0	0.0	5	5	123.2	0.0	73	19	654	70
Huslia	1	0	-	-	57	6	0.0	0.0	20	6	0.3	0.2	5	4	1.8	0.8	1	1	0.0	0.0	84	17	15	13
Hughes	0	0	-	-	11	8	0.1	0.1	10	8	0.1	0.0	2	2	3.0	0.0	1	1	1.0	0.0	24	19	10	2
Allakaket	2	2	0.0	0.0	28	5	0.0	0.0	16	5	0.0	0.0	5	5	0.0	0.0	3	3	0.0	0.0	54	20	0	0
Alatna	0	0	-	-	8	5	0.0	0.0	3	3	0.0	0.0	1	1	0.0	0.0	0	0	-	-	12	9	0	0
Bettles	0	0	-	-	15	14	0.0	0.0	4	3	0.0	0.0	1	1	0.0	0.0	0	0	-	-	20	18	0	0
District 4	14	11	0.0	0.0	382	97	0.2	0.1	258	102	1.1	0.3	64	61	7.9	0.1	18	18	58.2	0.0	736	289	1,917	211
Tanana	1	1	0.0	0.0	74	18	0.0	0.0	26	11	7.2	4.2	8	7	77.1	22.0	13	11	241.2	56.9	122	48	3,942	1,507
Rampart	0	0	-	-	11	9	0.6	0.2	3	1	0.0	-	14	14	9.0	0.0	1	0	-	-	29	24	132	5
Stevens Village	0	0	-	-	13	7	0.0	0.0	10	6	0.0	0.0	6	3	0.0	0.0	2	2	0.0	0.0	31	18	0	0
Birch Creek	0	0	-	-	9	8	0.0	0.0	5	5	0.0	0.0	0	0	-	-	0	0	-	-	14	13	0	0
Beaver	0	0	-	-	12	9	0.0	0.0	13	12	0.0	0.0	7	5	0.0	0.0	0	0	-	-	32	26	0	0
Fort Yukon	0	0	-	-	110	9	0.0	0.0	42	10	1.0	0.8	20	18	6.2	1.8	1	1	0.0	0.0	173	38	166	100
Venetie	0	0	-	-	38	5	0.0	0.0	8	3	0.0	0.0	5	3	0.0	0.0	3	3	0.0	0.0	54	14	0	0
Chalkyitsik	0	0	-	-	29	26	0.0	0.0	2	2	0.0	0.0	4	3	0.0	0.0	0	0	-	-	35	31	0	0
District 5	1	1	0.0	0.0	296	91	0.0	0.0	109	50	2.1	1.0	64	53	13.6	2.8	20	17	156.8	37.0	490	212	4,240	1,511
Survey Totals	32	27	0.0	0.0	1,113	276	1.0	0.5	1,058	412	1.9	0.3	260	239	10.3	0.9	56	52	83.8	13.2	2,519	1,006	10,504	1,965

a Households contacted indicates the number of households with complete numbers of dogs information, includes 95 percent confidence interval, CI (95%) (+/-). Dashes indicate indefinable values.

Appendix A 9. Estimated number of salmon given away by commercial fishermen to subsistence households and corresponding confidence intervals (CI) for surveyed villages, Yukon Area, 1999.

Community	Total Household	Households Contacted <sup>a</sup>	Chinook Salmon		Summer Chum Salmon		Fall Chum Salmon		Coho Salmon	
			Estimated Total	CI(95%) (+/-)	Estimated Total	CI(95%) (+/-)	Estimated Total	CI(95%) (+/-)	Estimated Total	CI(95%) (+/-)
Hooper Bay	194	56	0	0	0	0	0	0	0	0
Scammon Bay	76	20	0	0	0	0	0	0	0	0
<b>Coastal District</b>	<b>270</b>	<b>76</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Sheldon's Point	35	31	0	0	0	0	0	0	0	0
Alakanuk	128	43	0	0	0	0	0	0	0	0
Emmonak	157	69	0	0	0	0	101	166	67	111
Kotlik	90	31	0	0	0	0	0	0	0	0
<b>District 1</b>	<b>410</b>	<b>174</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>101</b>	<b>166</b>	<b>67</b>	<b>111</b>
Mountain Village	151	49	0	0	0	0	0	0	0	0
Pitkas Point	26	25	0	0	0	0	0	0	0	0
St. Mary's	118	35	0	0	0	0	0	0	0	0
Pilot Station	95	40	0	0	0	0	0	0	0	0
Marshall	68	29	0	0	50	0	0	0	0	0
<b>District 2</b>	<b>458</b>	<b>178</b>	<b>0</b>	<b>0</b>	<b>50</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Russian Mission	57	16	0	0	0	0	0	0	0	0
Holy Cross	66	32	0	0	0	0	0	0	0	0
Shageluk	32	29	0	0	0	0	0	0	0	0
<b>District 3</b>	<b>155</b>	<b>77</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Anvik	40	35	0	0	0	0	0	0	0	0
Grayling	51	27	0	0	0	0	0	0	0	0
Kaltag	57	23	0	0	0	0	0	0	0	0
Nulato	100	30	0	0	0	0	0	0	0	0
Koyukuk	38	34	0	0	0	0	0	0	0	0
Galena	183	39	0	0	0	0	0	0	0	0
Ruby	73	19	0	0	0	0	0	0	0	0
Huslia	84	17	0	0	0	0	0	0	0	0
Hughes	24	19	0	0	0	0	0	0	0	0
Atiakaket	54	20	0	0	0	0	0	0	0	0
Alatna	12	9	0	0	0	0	0	0	0	0
Bettles	20	18	0	0	0	0	0	0	0	0
<b>District 4</b>	<b>736</b>	<b>290</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Tanana	122	48	0	0	0	0	0	0	0	0
Rampart	29	25	0	0	0	0	0	0	0	0
Stevens Village	31	20	0	0	0	0	0	0	0	0
Birch Creek	14	13	0	0	0	0	0	0	0	0
Beaver	32	26	0	0	0	0	0	0	0	0
Fort Yukon	173	38	0	0	0	0	0	0	0	0
Venetie	54	14	0	0	0	0	0	0	0	0
Chalkyitsik	35	31	0	0	0	0	0	0	0	0
<b>District 5</b>	<b>490</b>	<b>215</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Survey Totals</b>	<b>2,519</b>	<b>1,010</b>	<b>0</b>	<b>0</b>	<b>50</b>	<b>0</b>	<b>101</b>	<b>166</b>	<b>67</b>	<b>111</b>

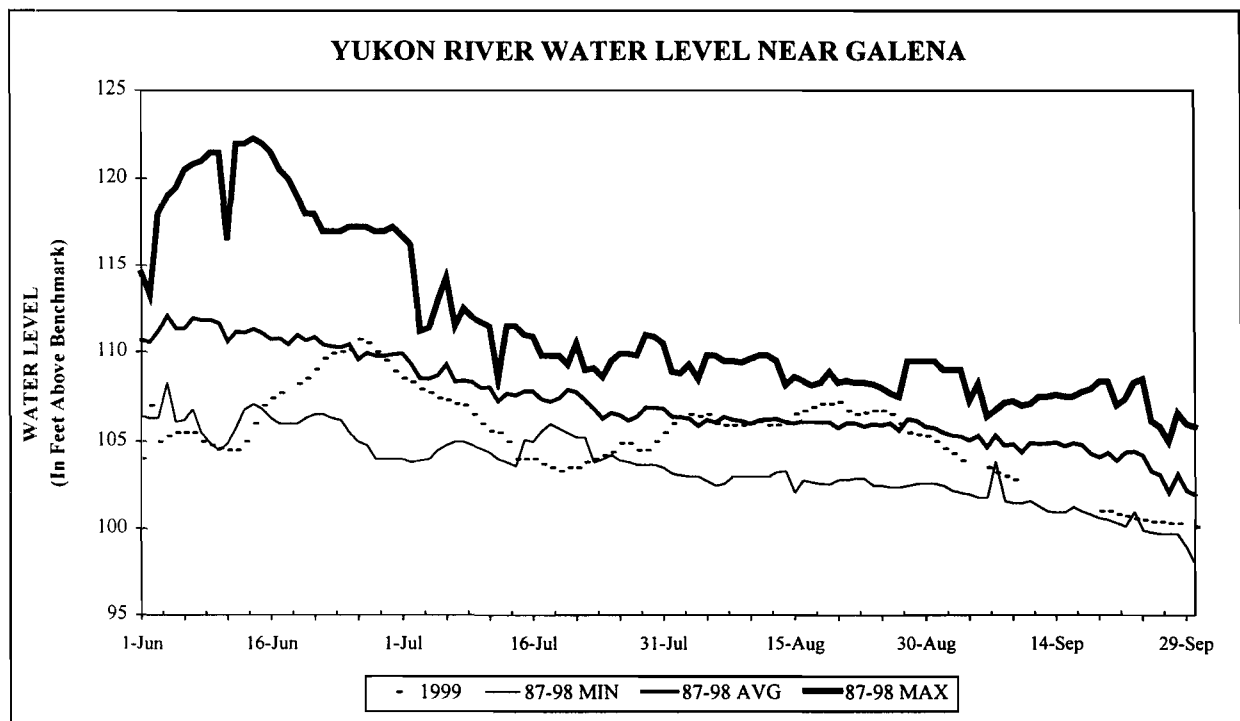
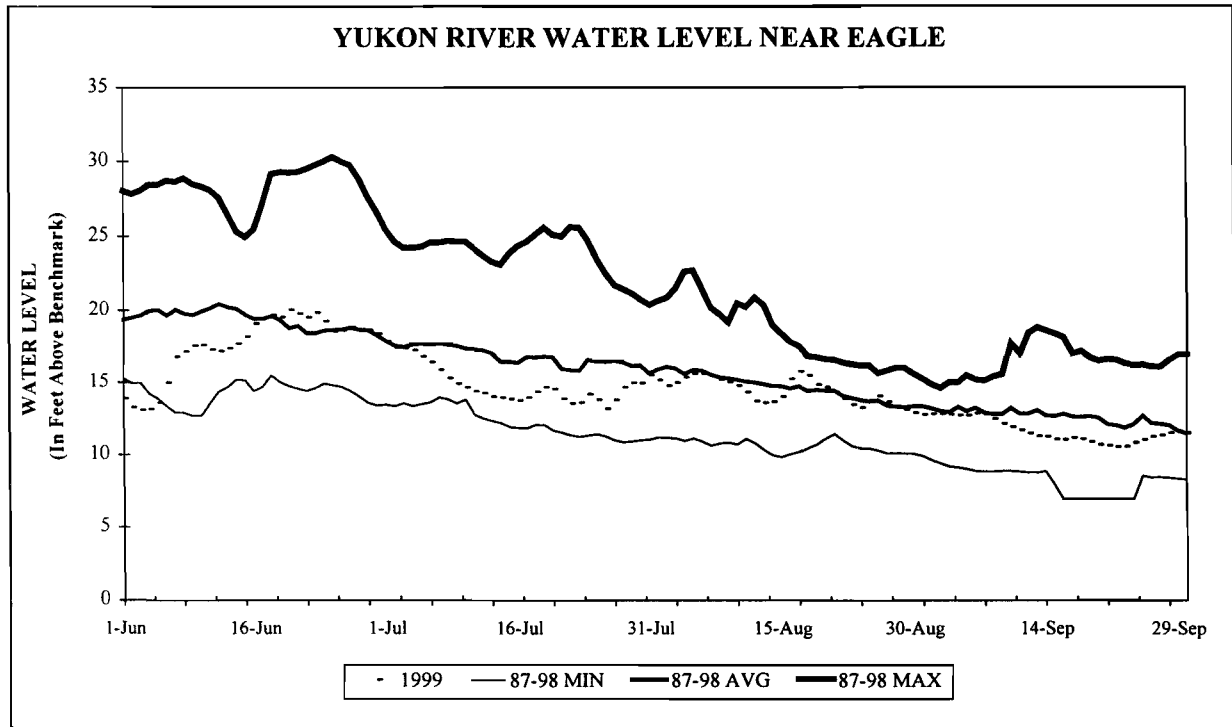
<sup>a</sup> The number of households contacted per species may vary. The number of households indicated is the greatest number of households contacted for a given species.

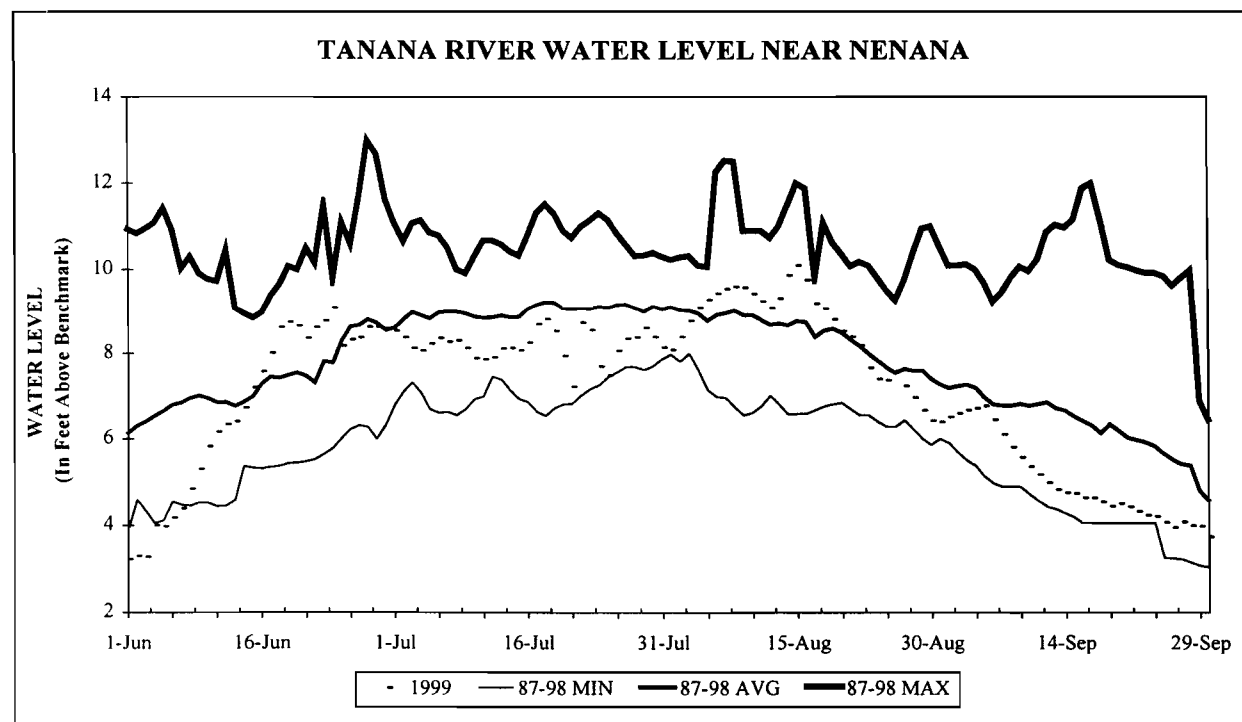
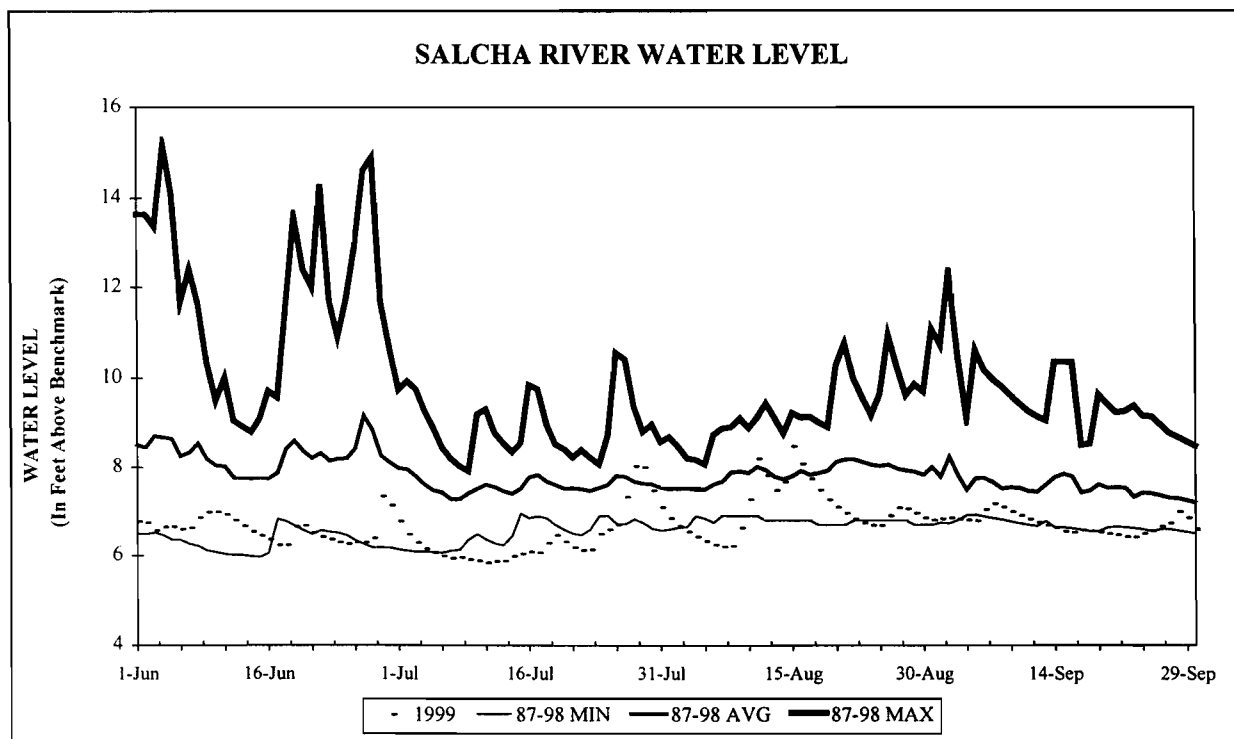
Appendix A 10. Estimated number of salmon given away by subsistence fishermen to another subsistence household and corresponding confidence intervals (CI) for surveyed villages, Yukon Area, 1999

Community	Total Households	Households Contacted <sup>a</sup>	Chinook Salmon		Summer Chum Salmon		Fall Chum Salmon		Coho Salmon	
			Estimated Total	CI(95%) (+/-)	Estimated Total	CI(95%) (+/-)	Estimated Total	CI(95%) (+/-)	Estimated Total	CI(95%) (+/-)
Hooper Bay	194	56	176	103	3,294	1,538	0	0	0	0
Scammon Bay	76	20	276	257	1,318	1,193	68	112	0	0
<b>Coastal District</b>	<b>270</b>	<b>76</b>	<b>452</b>	<b>277</b>	<b>4,612</b>	<b>1,947</b>	<b>68</b>	<b>112</b>	<b>0</b>	<b>0</b>
Sheldon's Point	35	31	274	60	330	109	54	25	20	7
Alakanuk	128	43	301	246	776	498	10	17	147	57
Emmonak	157	69	315	194	666	465	125	188	29	34
Kotlik	90	31	87	12	142	0	0	0	5	10
<b>District 1</b>	<b>410</b>	<b>174</b>	<b>977</b>	<b>320</b>	<b>1,914</b>	<b>690</b>	<b>189</b>	<b>190</b>	<b>201</b>	<b>67</b>
Mountain Village	151	49	170	176	514	421	13	12	3	6
Pitkas Point	26	25	72	0	173	24	10	0	3	0
St. Mary's	118	35	125	137	869	883	1	1	2	1
Pilot Station	95	40	131	91	252	207	0	0	0	0
Marshall	68	29	710	453	476	357	104	101	189	265
<b>District 2</b>	<b>458</b>	<b>178</b>	<b>1,208</b>	<b>513</b>	<b>2,284</b>	<b>1,062</b>	<b>128</b>	<b>101</b>	<b>197</b>	<b>265</b>
Russian Mission	57	16	266	246	0	0	0	0	0	0
Holy Cross	66	32	376	267	40	43	8	8	0	0
Shageluk	32	29	79	18	84	23	25	0	0	0
<b>District 3</b>	<b>155</b>	<b>77</b>	<b>721</b>	<b>364</b>	<b>124</b>	<b>49</b>	<b>33</b>	<b>8</b>	<b>0</b>	<b>0</b>
Anvik	40	34	199	61	6	4	2	2	60	31
Grayling	51	27	123	113	355	580	337	55	0	0
Kaltag	57	23	388	319	0	0	255	295	0	0
Nulato	100	30	185	166	7	11	85	109	0	0
Koyukuk	38	34	53	10	176	199	101	60	0	0
Galena	183	39	345	254	1,411	2,058	572	268	0	0
Ruby	73	19	593	712	3,827	6,131	1,455	2,384	38	70
Huslia	84	17	102	79	38	0	118	87	0	0
Hughes	24	19	14	10	75	71	21	21	0	0
Allakaket	54	20	55	77	330	386	0	0	0	0
Alatna	12	9	9	7	8	10	0	0	0	0
Bettles	20	18	1	1	0	0	2	1	0	0
<b>District 4</b>	<b>736</b>	<b>289</b>	<b>2,067</b>	<b>854</b>	<b>6,233</b>	<b>6,508</b>	<b>2,948</b>	<b>2,422</b>	<b>98</b>	<b>76</b>
Tanana	122	48	283	131	0	0	1,527	547	0	0
Rampart	29	25	147	30	12	10	223	0	6	5
Stevens Village	31	18	53	27	0	0	371	495	0	0
Birch Creek	14	14	67	27	0	0	23	0	0	0
Beaver	32	26	33	14	0	0	0	0	0	0
Fort Yukon	173	38	525	438	0	0	431	237	42	72
Venetie	54	14	92	121	0	0	93	139	0	0
Chalkyitsik	35	31	32	7	0	0	45	33	0	0
<b>District 5</b>	<b>490</b>	<b>214</b>	<b>1,232</b>	<b>476</b>	<b>12</b>	<b>10</b>	<b>2,713</b>	<b>788</b>	<b>48</b>	<b>72</b>
<b>Survey Totals</b>	<b>2,519</b>	<b>1,008</b>	<b>6,657</b>	<b>1,237</b>	<b>15,179</b>	<b>6,910</b>	<b>6,079</b>	<b>2,557</b>	<b>544</b>	<b>293</b>

<sup>a</sup> The number of households contacted per species may vary. The number of households indicated is the greatest number of households contacted for a given species.

Appendix A.11. Water levels for select locations, 1999 compared to the minimum, average, and maximum, from 1987 to 1998, Yukon River drainage.





## APPENDIX B

### YUKON RIVER DRAINAGE HISTORICAL SUBSISTENCE AND PERSONAL USE SALMON HARVESTS



Appendix B i Estimated chinook salmon subsistence harvest by fishing district and by community of residence, Yukon Area, 1988-1999. a

Community	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	1989-1993 Average	1994-1998 Average
Hooper Bay	1,099 b	14 b			503	230	157	1,500	1,127	613	13	173	462 c	682
Scammon Bay	489 b	2 b			948	1,199	668	585	1,238	526	378	938	660 c	679
<b>Coastal District Subtotal</b>	<b>1,588</b>	<b>16</b>			<b>1,451</b>	<b>1,429</b>	<b>825</b>	<b>2,085</b>	<b>2,365</b>	<b>1,139</b>	<b>391</b>	<b>1,111</b>	<b>1,121</b>	<b>1,361</b>
Sheldon Point	302	165	756	445	388	561	606	459	450	970	527	855	463	602
Alakanuk	738	820	871	1,044	623	2,562	1,045	1,191	662	2,058	1,930	1,236	1,184	1,377
Emmonak	1,786	1,598	1,873	1,311	2,336	4,372	2,384	1,711	702	3,080	2,396	3,337	2,298	2,055
Kotlik	1,112	1,982	3,119	3,125	1,794	2,913	2,505	2,599	1,832	1,442	2,389	1,420	2,587	2,153
<i>District 1 Subtotal</i>	<i>3,938</i>	<i>4,565</i>	<i>6,619</i>	<i>5,925</i>	<i>5,141</i>	<i>10,408</i>	<i>6,540</i>	<i>5,960</i>	<i>3,646</i>	<i>7,550</i>	<i>7,242</i>	<i>6,848</i>	<i>6,532</i>	<i>6,188</i>
Mountain Village	740	2,001	1,792	1,171	1,249	3,217	1,511	1,542	1,315	2,081	2,533	2,162	1,886	1,796
Pitkas Point	367	592	391	652	851	1,001	469	559	762	793	817	632	697	680
St. Marys	1,011	1,592	2,085	1,836	1,753	2,042	2,722	2,031	1,766	2,592	2,679	2,150	1,862	2,358
Pilot Station	674	1,498	3,786	2,681	1,818	2,661	1,977	1,614	1,811	2,373	1,715	2,715	2,489	1,898
Marshall	1,031	1,464	1,492	1,277	1,403	2,592	2,277	3,291	2,126	1,511	1,711	2,780	1,646	2,183
<i>District 2 Subtotal</i>	<i>3,823</i>	<i>7,147</i>	<i>9,546</i>	<i>7,617</i>	<i>7,074</i>	<i>11,513</i>	<i>8,956</i>	<i>9,037</i>	<i>7,780</i>	<i>9,350</i>	<i>9,455</i>	<i>10,439</i>	<i>8,579</i>	<i>8,916</i>
Russian Mission	1,850	2,367	1,694	1,349	1,282	3,273	1,793	2,450	2,709	1,459	1,314	2,722	1,993	1,945
Holy Cross	2,593	2,379	2,337	1,649	3,491	3,191	4,040	2,808	3,953	3,472	2,648	4,581	2,609	3,384
Shageluk	104	32	62	189	218	128	291	161	121	1,380	552	412	126	501
<i>District 3 Subtotal</i>	<i>4,547</i>	<i>4,778</i>	<i>4,093</i>	<i>3,187</i>	<i>4,991</i>	<i>6,592</i>	<i>6,124</i>	<i>5,419</i>	<i>6,783</i>	<i>6,311</i>	<i>4,514</i>	<i>7,715</i>	<i>4,728</i>	<i>5,830</i>
<b>Lower Yukon River Total</b>	<b>12,308</b>	<b>16,490</b>	<b>20,258</b>	<b>16,729</b>	<b>17,206</b>	<b>28,513</b>	<b>21,620</b>	<b>20,416</b>	<b>18,209</b>	<b>23,211</b>	<b>21,211</b>	<b>25,002</b>	<b>19,839</b>	<b>20,933</b>
Anvik	211	418	481	619	389	663	424	450	768	951	1,025	776	514	724
Grayling	1,571	1,082	144	874	1,074	1,045	1,843	1,340	1,036	2,391	2,177	2,476	844	1,757
Kallag	1,168	1,306	2,244	1,866	1,084	1,260	1,653	1,890	994	1,036	1,870	2,051	1,552	1,489
Nulato	1,986	2,079	2,788	2,500	1,596	1,660	1,735	1,533	1,461	1,576	4,147	1,799	2,125	2,090
Koyukuk	711	1,003	876	885	510	853	589	146	402	851	800	506	825	558
Galena	1,982	1,374	3,134	2,574	1,870	1,732	1,834	1,336	2,770	2,350	1,668	2,539	2,137	1,992
Ruby/Kokrines	1,402	1,016	811	971	498	3,263	1,539	1,435	557	2,260	3,891	777	1,312	1,936
<i>District 4 Yukon River Subtotal (Excluding the Koyukuk River)</i>	<i>9,031</i>	<i>8,278</i>	<i>10,478</i>	<i>10,289</i>	<i>7,021</i>	<i>10,476</i>	<i>9,617</i>	<i>8,130</i>	<i>7,988</i>	<i>11,415</i>	<i>15,578</i>	<i>10,924</i>	<i>9,308</i>	<i>10,546</i>
Huslia	89	177	198	198	751	232	239	932	67	57	23	90	311	264
Hughes	29	181	90	146	29	88	107 d	77	54	34	91	105	107	73
Allakaket	339	438 f	284	446	395	135	338 d	321	82	423	85	108	320 g	250
Alatna	27	- f	72	5	42	4	26 d	10	2	38	4	10	30 g	16
Bettles	0	0	0	16	53	1	0	4	0	39	20	1	14	13
<i>Koyukuk River Subtotal</i>	<i>484</i>	<i>796</i>	<i>644</i>	<i>811</i>	<i>1,270</i>	<i>460</i>	<i>710</i>	<i>1,344</i>	<i>205</i>	<i>591</i>	<i>223</i>	<i>314</i>	<i>782</i>	<i>615</i>
<i>District 4 Subtotal</i>	<i>9,515</i>	<i>9,074</i>	<i>11,122</i>	<i>11,100</i>	<i>8,291</i>	<i>10,936</i>	<i>10,327</i>	<i>9,474</i>	<i>8,193</i>	<i>12,006</i>	<i>15,801</i>	<i>11,238</i>	<i>10,090</i>	<i>11,160</i>

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Community	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	1989-1993 Average	1994-1998 Average
Tanana	3,537	3,008	2,284	2,483	2,477	3,362	2,999	2,398	2,741	3,596	5,212	3,388	2,723	3,389
Rampart	3,145	3,177	1,481	988	2,802	1,956	1,354	1,461	1,751	2,203	885	2,018	2,081	1,531
Fairbanks h j	0	200	420	982	1,394	1,514	1,920	1,447	1,166	955	1,231	851	902	1,344
Stevens Village	2,845	3,101	1,295	2,035	1,887	1,754	2,814	2,674	681	2,070	1,232	1,214	2,014	1,894
Birch Creek	0 b	0	0	196	44	0	119	93	0	373	48	24	48	127
Beaver	940	1,694	721	713	1,564	1,557	850	1,021	886	1,859	470	473	1,250	1,017
Fort Yukon	2,245	4,898	4,051	5,585	4,122	6,361	4,727	3,132	4,957	3,145	1,771	2,539	5,003	3,546
Circle j	1,773	1,785 k	1,767	1,720	1,585	745	1,377	1,145	1,781	1,091	685	524	1,518 g	1,216
Central j	261	- k	184	151	167	210	240	171	131	146	170	91	195 g	172
Eagle j	2,333	2,385	1,742	1,193	1,040	753	1,234	1,886	1,092	1,534	2,473	2,558	1,423	1,644
Other j m			615	374	571	437	602	1,004	377	763	446	488	499 n	638
<i>District 5 Yukon River Subtotal (Excluding Chandalar/Black Rivers)</i>	17,079	20,248	14,560	16,420	17,653	18,649	18,236	16,432	15,563	17,735	14,623	14,168	17,656	16,518
Venetie	121	88	29	9	35	2,716	524	434	134	314	168	127	575	315
Chalkyitsik	0	0	0	0	3	0	0	0	30	0	11	35	1	8
<i>Chandalar/Black Rivers Subtotal</i>	121	88	29	9	38	2,716	524	434	164	314	179	162	576	323
<i>District 5 Subtotal</i>	17,200	20,336	14,589	16,429	17,691	21,365	18,760	16,866	15,727	18,049	14,802	14,330	17,225	17,767
Manley j	572	992	1,169	401	551	238	480	335	134	242	209	136	670	280
Minto j	466	366	100	134	142	468	316	535	523	1,208	275	317	242	571
Nenana j	3,846	1,188	1,265	1,599	1,267	693	759	607	423	1,082	1,187	975	1,202	812
Fairbanks j p	0	0	84	378	402	273	775	285	97	176	230	195	227	313
Other j r	0	0	0	3	76	0	40	17	0	4	18	1	16	16
<i>District 6 Tanana River Subtotal</i>	4,884	2,546	2,618	2,515	2,438	1,672	2,370	1,779	1,177	2,712	1,919	1,624	2,358	1,991
<b>Upper Yukon River Total</b>	31,599	31,956	28,329	30,044	28,420	33,973	31,457	28,119	25,097	32,767	32,522	27,192	29,673	30,918
<b>Alaska, Yukon River Total s</b>	43,907	48,446	48,587	46,773	45,626	62,486	53,077	48,535	43,306	55,978	53,733	52,194	49,512	51,852
<b>Alaska, Yukon Area Total</b>	45,495	48,462	48,587	46,773	47,077	63,915	53,902	50,620	45,671	57,117	54,124	53,305	50,633	53,213

a Historic estimated subsistence harvests are available in each year's respective Yukon Area Annual Management Report (1961 to 1998). Beginning in 1988 subsistence salmon harvest estimates have been generated from a stratified random sample of village households. Estimates include test fish catches given away. Blanks indicate harvest information was not collected.

b The community was not surveyed, harvest estimates were calculated from calendar and post card replies.

c Average harvest includes 1988, 1989, 1992 and 1993.

d Due to floods in 1994, Hughes, Allakaket, and Alaina were not surveyed. The 1994 chinook salmon harvest is estimated based on a five-year-average, 1989-1993.

f Alaina and Allakaket harvests combined in 1989.

g Average harvest includes 1988 and 1990 through 1993.

h Harvests by Fairbanks subsistence permit holders who fished in District 5 near the Yukon River bridge crossing.

j In 1988 and 1989, permit and household interview data were expanded for permits not returned. Beginning in 1990, reported harvest is from returned permits only.

k Circle and Central harvests are combined in 1989.

m Other permit holders who fished in District 5 but did not reside in the villages listed.

n Average harvest includes 1990 through 1993.

p Harvests by Fairbanks subsistence permit holders who fished in the Tanana River.

r Other permit holders who fished in District 6 but did not reside in the villages listed.

s Does not include the Coastal District.

Appendix D 2 Estimated summer chum salmon subsistence harvest by fishing district and by community of residence, Yukon Area, 1988-1999 a

Community	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	1989-1993 Average	1994-1998 Average
Hooper Bay	23,059 b	2,293 b			12,900	16,106	10,556	13,374	15,870	12,310	261	10,146	13,590 c	10,474
Scammon Bay	8,171 b	48 b			3,795	4,692	4,347	3,986	6,365	3,401	1,101	3,315	4,177 c	3,840
<b>Coastal District Subtotal</b>	<b>31,230</b>	<b>2,341</b>			<b>16,695</b>	<b>20,798</b>	<b>14,903</b>	<b>17,360</b>	<b>22,235</b>	<b>15,711</b>	<b>1,362</b>	<b>13,461</b>	<b>17,766</b>	<b>14,314</b>
Sheldon Point	2,589	4,314	1,458	2,226	1,415	2,362	1,941	2,979	2,634	2,603	1,872	1,343	2,394	2,406
Alakanuk	6,992	12,108	7,265	8,058	9,951	8,935	5,947	10,538	6,171	7,443	5,643	3,808	8,885	7,148
Emmonak	10,528	22,985	15,215	8,401	12,296	15,568	13,060	11,696	6,097	12,399	9,558	10,310	14,166	10,562
Kotlik	8,825	13,437	13,061	9,105	9,577	7,121	11,197	9,777	12,387	4,803	9,815	4,708	10,188	9,596
<b>District 1 Subtotal</b>	<b>28,934</b>	<b>52,844</b>	<b>36,999</b>	<b>27,790</b>	<b>33,239</b>	<b>33,986</b>	<b>32,145</b>	<b>34,990</b>	<b>27,289</b>	<b>27,248</b>	<b>26,888</b>	<b>20,169</b>	<b>35,632</b>	<b>29,712</b>
Mountain Village	9,248	15,869	9,950	4,743	7,864	10,505	3,938	10,554	9,285	11,310	9,596	10,059	9,697	8,937
Pitkas Point	2,384	4,176	1,438	1,452	759	1,481	1,103	1,665	1,619	747	1,302	849	1,948	1,287
St. Marys	8,117	8,948	8,077	7,832	7,796	5,925	10,128	5,950	6,736	8,874	9,047	6,752	7,783	8,147
Pilot Station	4,242	6,783	6,698	4,634	6,236	5,641	5,450	4,427	6,355	4,532	5,042	5,265	5,706	5,161
Marshall	4,796	3,927	2,290	2,042	2,076	1,745	2,288	4,594	4,431	1,508	1,293	1,212	2,813	2,823
<b>District 2 Subtotal</b>	<b>28,787</b>	<b>39,703</b>	<b>28,453</b>	<b>20,703</b>	<b>24,731</b>	<b>25,297</b>	<b>22,907</b>	<b>27,190</b>	<b>28,426</b>	<b>26,971</b>	<b>26,280</b>	<b>24,137</b>	<b>27,946</b>	<b>26,355</b>
Russian Mission	2,794	2,229	2,146	837	3,331	1,838	801	3,653	3,554	585	702	616	2,196	1,859
Holy Cross	3,036	1,753	857	1,028	1,001	1,517	1,479	948	1,700	487	269	264	1,532	977
Shageluk	8,779	8,842	6,518	3,680	5,267	4,183	6,212	7,542	6,114	9,244	5,501	4,868	6,212	6,923
<b>District 3 Subtotal</b>	<b>14,609</b>	<b>12,824</b>	<b>9,521</b>	<b>5,545</b>	<b>9,599</b>	<b>7,538</b>	<b>8,492</b>	<b>12,143</b>	<b>11,368</b>	<b>10,316</b>	<b>6,472</b>	<b>5,748</b>	<b>9,939</b>	<b>9,758</b>
<b>Lower Yukon River Total</b>	<b>72,330</b>	<b>105,371</b>	<b>74,973</b>	<b>54,038</b>	<b>67,569</b>	<b>66,821</b>	<b>63,544</b>	<b>74,323</b>	<b>67,083</b>	<b>64,535</b>	<b>59,640</b>	<b>50,054</b>	<b>73,517</b>	<b>65,825</b>
Anvik	12,607	410	2,032	876	1,142	1,735	907	9	185	6,306	2,139	848	3,134	1,909
Grayling	22,634	14,570	1,430	8,094	3,605	1,137	1,418	3,385	587	2,446	4,032	4,126	8,578	2,374
Kaltag	3,592	632	6,956	2,287	1,204	1,116	3,683	139	31	73	175	625	2,631	820
Nulato	10,201	200	502	159	889	15	975	228	1,003	115	3,518	1,945	1,994	1,168
Koyukuk	284	381	283	2,326	1,130	230	2,039	315	41	739	1,819	197	772	991
Galena	7,413	6,216	1,760	3,493	3,232	2,477	1,198	1,954	3,902	4,575	2,333	1,688	4,099	2,792
Ruby/Kokrines	4,010	1,844	351	1,352	2,420	1,459	4,586	4,445	2,016	3,286	2,251	1,697	1,906	3,317
<b>District 4 Yukon River Subtotal (Excluding the Koyukuk River)</b>	<b>60,741</b>	<b>24,253</b>	<b>13,314</b>	<b>18,587</b>	<b>13,622</b>	<b>8,169</b>	<b>14,806</b>	<b>10,475</b>	<b>7,765</b>	<b>17,540</b>	<b>16,267</b>	<b>11,126</b>	<b>23,114</b>	<b>13,371</b>
Hustla	14,895	10,005	7,368	7,857	13,670	8,343	6,014	4,885	2,372	840	449	1,192	10,356	2,912
Hughes	2,445	3,687	509	1,257	1,625	827	1,581 d	2,448	1,411	1,579	334	577	1,725	1,471
Allakaket	7,066	2,915 f	5,247	6,451	6,368	2,651	4,693 d	6,396	4,668	3,916	901	2,245	5,557 g	4,115
Alatna	1,458	- f	72	962	490	52	365 d	140	209	145	13	99	607 g	174
Bettles	18	75	24	155	37	34	45	740	0	210	82	100	57	215
<b>Koyukuk River Subtotal</b>	<b>25,882</b>	<b>16,682</b>	<b>13,220</b>	<b>16,682</b>	<b>22,190</b>	<b>11,907</b>	<b>12,698</b>	<b>14,609</b>	<b>8,660</b>	<b>6,690</b>	<b>1,779</b>	<b>4,213</b>	<b>18,302</b>	<b>8,887</b>
<b>District 4 Subtotal</b>	<b>86,623</b>	<b>40,935</b>	<b>26,534</b>	<b>35,269</b>	<b>35,812</b>	<b>20,076</b>	<b>27,504</b>	<b>25,084</b>	<b>16,425</b>	<b>24,230</b>	<b>18,046</b>	<b>15,339</b>	<b>41,416</b>	<b>22,258</b>

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Community	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	1989-1993 Average	1994-1998 Average
Tanana	13,972	7,756	5,905	2,779	4,553	4,245	7,022	3,660	5,190	2,526	1,966	1,214	6,535	4,073
Rampart	3,383	28	58	20	4,494	1,489	559	1,168	1,188	738	19	60	1,579	734
Fairbanks h j	0	0	25	1,068	706	465	360	722	2,958	424	57	346	377	904
Stevens Village	865	2,375	1,671	1,385	460	653	459	158	530	191	171	26	1,235	302
Beaver	214	124	108	2,355	12	134	655	36	572	2	15	91	491	256
Fort Yukon k	7,717	1,760	145	11,974	1,700	3,830	2,043	998	26	134	30	0	4,521	646
Circle j	742	361 m	1,262	51	265	83	98	70	271	257	1	60	481 g	139
Central j	129	- m	5	0	91	2	8	2	53	25	1	0	45 g	18
Eagle j	1,273	547	361	607	23	32	38	57	105	17	52	271	474	54
Other j n			187	32	291	24	21	232	616	130	2	42	134 p	200
<i>District 5 Yukon River Subtotal (Excluding Chandalar/Black Rivers)</i>	28,295	12,951	9,727	20,271	12,595	10,957	11,263	7,103	11,509	4,444	2,314	2,110	15,871	7,327
Venetie	701	30	0	3,393	0	129	567	552	0	76	0	166	709	239
Chalkyitsik	327	0	90	500	17	0	0	0	0	0	0	0	156	0
<i>Chandalar/Black Rivers Subtotal</i>	1,028	30	90	3,893	17	129	567	552	0	76	0	166	865	239
<i>District 5 Subtotal</i>	29,323	12,981	9,817	24,164	12,612	11,086	11,830	7,655	11,509	4,520	2,314	2,276	16,736	7,566
Manley j	3,731	2,457	2,250	1,716	850	1,310	1,405	1,657	1,219	576	211	272	2,052	1,014
Minto j	947	1,425	500	748	625	367	509	1,320	1,421	1,056	148	173	769	891
Nenana j	5,654	3,986	1,383	1,499	6,372	5,019	1,352	5,043	4,411	1,899	5,041	1,894	3,986	3,549
Fairbanks j r	0	0	152	1,096	1,342	97	3,693	3,528	392	271	604	315	448	1,698
Other r s	0	0	0	10	315	0	67	113	43	22	0	0	54	49
<i>District 6 Tanana River Subtotal</i>	10,332	7,868	4,285	5,069	9,504	6,793	7,026	11,661	7,486	3,824	6,004	2,654	7,309	7,200
<b>Upper Yukon River Total</b>	<b>126,278</b>	<b>61,784</b>	<b>40,636</b>	<b>64,502</b>	<b>57,928</b>	<b>37,955</b>	<b>46,360</b>	<b>44,400</b>	<b>35,420</b>	<b>32,574</b>	<b>26,364</b>	<b>20,269</b>	<b>65,461</b>	<b>37,024</b>
<b>Alaska, Yukon River Total t</b>	<b>198,608</b>	<b>167,155</b>	<b>115,609</b>	<b>118,540</b>	<b>125,497</b>	<b>104,776</b>	<b>109,904</b>	<b>118,723</b>	<b>102,503</b>	<b>97,109</b>	<b>86,004</b>	<b>70,323</b>	<b>138,978</b>	<b>102,849</b>
<b>Alaska, Yukon Area Total</b>	<b>229,838</b>	<b>169,496</b>	<b>115,609</b>	<b>118,540</b>	<b>142,192</b>	<b>125,574</b>	<b>124,807</b>	<b>136,083</b>	<b>124,738</b>	<b>112,820</b>	<b>87,366</b>	<b>83,784</b>	<b>156,744</b>	<b>117,163</b>

a Historic estimated subsistence harvests are available in each year's respective Yukon Area Annual Management Report (1961 to 1998). Beginning in 1988 subsistence salmon harvest estimates have been generated from a stratified random sample of village households. Estimates include test fish catches given away. District 4 summer chum salmon subsistence harvest estimates prior to 1988 and District 5 and 6 prior to 1989 included commercially caught summer chum salmon carcasses retained for subsistence use. Beginning in 1988 and 1989, efforts were made to exclude commercial carcasses from subsistence harvest estimates.

Blanks indicate harvest information was not collected.

b The community was not surveyed, harvest estimates were calculated from calendar and post card replies.

c Average harvest includes 1988, 1989, 1992 and 1993.

d Due to floods in 1994, Hughes, Alakaket, and Alatna were not surveyed. The 1994 summer chum salmon harvest is estimated based on a five-year-average, 1989-1993.

f Alatna and Alakaket harvests are combined in 1989.

g Average harvest includes 1988 and 1990 through 1993.

h Harvests by Fairbanks subsistence permit holders who fished in District 5 near the Yukon River bridge crossing.

j In 1988 and 1989, permit and household interview data were expanded for permits not returned. Beginning in 1990, reported harvest is from returned permits only.

k Includes Birch Creek except in 1988, 1990 and 1991. A harvest of one summer chum salmon was estimated in 1997.

m Circle and Central harvests are combined in 1989.

n Other permit holders who fished in District 5 but did not reside in the villages listed.

p Average harvest includes 1990 through 1993.

r Harvests by Fairbanks subsistence permit holders who fished in the Tanana River.

s Other permit holders who fished in District 6 but did not reside in the villages listed.

t Does not include the Coastal District.

Appendix R.3 Estimated fall chum salmon subsistence harvest by fishing district and by community of residence, Yukon Area, 1988-1999. a

Community	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	1989-1993 Average	1994-1998 Average
Hooper Bay	1,711 b	146 b			127	113	284	207	392	0	0	0	524 c	177
Scammon Bay	551 b	10 b			79	7	63	147	0	0	34	204	162 c	49
<b>Coastal District Subtotal</b>	<b>2,262</b>	<b>156</b>			<b>206</b>	<b>120</b>	<b>347</b>	<b>354</b>	<b>392</b>	<b>0</b>	<b>34</b>	<b>204</b>	<b>686</b>	<b>225</b>
Sheldon Point	289	586	102	84	490	158	25	256	21	337	268	115	284	181
Alakanuk	1,194	430	267	193	401	182	73	631	100	900	665	558	295	474
Emmonak	1,792	840	2,353	2,027	1,628	1,507	3,441	1,614	1,501	1,039	867	1,849	1,671	1,692
Kotlik	2,200	3,058	2,613	1,631	2,697	5,923	1,348	2,197	2,525	856	1,365	3,980	3,184	1,658
<b>District 1 Subtotal</b>	<b>5,475</b>	<b>4,914</b>	<b>5,335</b>	<b>3,935</b>	<b>5,216</b>	<b>7,770</b>	<b>4,887</b>	<b>4,698</b>	<b>4,147</b>	<b>3,132</b>	<b>3,163</b>	<b>6,502</b>	<b>5,434</b>	<b>4,005</b>
Mountain Village	1,880	4,641	1,566	1,473	1,052	1,113	797	1,347	1,366	2,698	2,031	1,968	1,969	1,648
Pitkas Point	622	275	150	610	77	268	294	99	603	178	233	53	276	281
St. Marys	1,911	1,695	806	1,592	2,356	440	1,062	542	658	310	416	722	1,378	598
Pilot Station	1,372	1,872	1,941	1,062	1,170	1,017	1,527	575	448	1,106	1,162	1,155	1,412	964
Marshall	2,815	1,532	1,724	891	2,727	256	471	754	2,212	388	640	696	1,426	893
<b>District 2 Subtotal</b>	<b>8,600</b>	<b>10,015</b>	<b>6,187</b>	<b>5,628</b>	<b>7,382</b>	<b>3,094</b>	<b>4,151</b>	<b>3,317</b>	<b>5,287</b>	<b>4,880</b>	<b>4,482</b>	<b>4,594</b>	<b>6,461</b>	<b>4,383</b>
Russian Mission	1,151	308	878	425	648	172	11	865	587	0	137	100	486	320
Holy Cross	596	711	1,178	190	845	1,066	665	681	1,814	420	1,095	239	798	935
Shageluk	0	4	0	0	865	211	186	126	305	367	329	76	216	263
<b>District 3 Subtotal</b>	<b>1,747</b>	<b>1,023</b>	<b>2,056</b>	<b>615</b>	<b>2,358</b>	<b>1,449</b>	<b>862</b>	<b>1,672</b>	<b>2,706</b>	<b>787</b>	<b>1,561</b>	<b>415</b>	<b>1,500</b>	<b>1,518</b>
<b>Lower Yukon River Total</b>	<b>15,822</b>	<b>15,952</b>	<b>13,578</b>	<b>10,178</b>	<b>14,956</b>	<b>12,313</b>	<b>9,900</b>	<b>9,687</b>	<b>12,140</b>	<b>8,599</b>	<b>9,206</b>	<b>11,511</b>	<b>13,395</b>	<b>9,906</b>
Anvik	136	168	583	452	894	420	155	269	457	514	388	126	503	357
Grayling	1,780	830	1,405	3,616	2,993	2,083	811	1,155	1,759	1,531	648	1,370	2,185	1,181
Kaltag	2,293	1,654	2,327	2,834	2,522	704	630	644	1,049	1,142	499	784	2,008	793
Nulato	1,673	2,436	3,546	1,637	1,910	571	1,109	1,137	2,299	697	367	2,338	2,020	1,122
Koyukuk	587	2,460	860	2,761	2,817	2,052	1,049	814	2,458	1,954	1,583	1,544	2,190	1,572
Galena	4,308	6,436	3,202	5,525	2,393	3,255	3,963	3,202	6,620	3,370	1,915	1,932	4,162	3,814
Ruby/Kokrines	5,171	6,599	3,352	2,856	4,499	1,085	5,553	4,695	561	2,195	2,427	907	3,678	3,086
<b>District 4 Yukon River Subtotal (Excluding the Koyukuk River)</b>	<b>15,928</b>	<b>20,583</b>	<b>15,275</b>	<b>19,681</b>	<b>18,028</b>	<b>10,170</b>	<b>13,270</b>	<b>11,916</b>	<b>15,203</b>	<b>11,403</b>	<b>7,827</b>	<b>8,981</b>	<b>16,747</b>	<b>11,924</b>
Huslia	1,697	1,728	846	411	1,286	258	55	1,035	298	10	0	89	906	280
Hughes	311	260	70	270	325	169	0 d	263	274	51	60	84	219	130
Allakaket	326	1,969 f	2,470	475	1,452	233	0	260	961	270	11	20	991 g	300
Alatna	117	- f	580	38	127	2	0 d	0	0	0	0	0	173 g	0
Bettles	0	0	0	0	14	0	0	583	50	0	0	0	3	127
<b>Koyukuk River Subtotal</b>	<b>2,451</b>	<b>3,957</b>	<b>3,966</b>	<b>1,194</b>	<b>3,204</b>	<b>662</b>	<b>55</b>	<b>2,141</b>	<b>1,583</b>	<b>331</b>	<b>71</b>	<b>193</b>	<b>2,291</b>	<b>836</b>
<b>District 4 Subtotal</b>	<b>18,379</b>	<b>24,540</b>	<b>19,241</b>	<b>20,875</b>	<b>21,232</b>	<b>10,832</b>	<b>13,325</b>	<b>14,057</b>	<b>16,786</b>	<b>11,734</b>	<b>7,898</b>	<b>9,174</b>	<b>19,039</b>	<b>12,760</b>

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Community	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	1989-1993 Average	1994-1998 Average
Tanana	55,998	40,845	41,145	40,868	19,365	23,103	34,681	14,409	21,420	25,058	24,958	22,305	33,065	24,105
Rampart	3,600	2,472	10,818	5,801	5,701	3,272	1,007	1,403	896	646	100	4,324	5,613	810
Fairbanks h j	0	7	82	2,022	2,491	930	2,870	2,184	2,727	491	96	681	1,106	1,674
Stevens Village k	1,451	6,633	3,857	2,481	150	862	45	3,194	991	1,585	1,076	20	2,797	1,378
Beaver	96	7,242	757	7	361	692	2,069	1,231	9	243	409	16	1,812	792
Ft. Yukon	2,766	27,790	11,627	7,467	2,284	2,380	6,827	9,196	8,144	6,119	3,035	9,702	10,310	6,664
Circle j	3,646	4,478 m	6,639	6,340	6,279	349	4,581	5,102	5,308	3,707	37	2,722	4,651 g	3,747
Central j	750	- m	165	73	100	0	0	0	132	0	0	0	218 g	26
Eagle j	14,800	11,557	8,027	7,985	5,630	2,070	8,263	13,115	14,916	14,488	543	11,292	7,054	10,265
Other j n			529	100	0	1,750	0	830	505	421	50	65	595 p	361
<b>District 5 Yukon River Subtotal (Excluding Chandalar/Black Rivers)</b>	<b>83,107</b>	<b>101,024</b>	<b>83,646</b>	<b>73,144</b>	<b>42,361</b>	<b>35,408</b>	<b>60,343</b>	<b>50,664</b>	<b>55,048</b>	<b>52,758</b>	<b>30,302</b>	<b>51,127</b>	<b>67,219</b>	<b>49,823</b>
Venetie	34	7,977	5,377	758	3,066	7,881	4,302	6,085	7,195	1,564	658	2,011	5,012	3,961
Chalkyitsik	1,068	3,000	1,490	100	274	475	1,751	845	1,230	936	433	442	1,068	1,039
<b>Chandalar/Black Rivers Subtotal</b>	<b>1,102</b>	<b>10,977</b>	<b>6,867</b>	<b>858</b>	<b>3,340</b>	<b>8,356</b>	<b>6,053</b>	<b>6,930</b>	<b>8,425</b>	<b>2,500</b>	<b>1,091</b>	<b>2,453</b>	<b>6,080</b>	<b>5,000</b>
<b>District 5 Subtotal</b>	<b>84,209</b>	<b>112,001</b>	<b>90,513</b>	<b>74,002</b>	<b>45,701</b>	<b>43,764</b>	<b>66,396</b>	<b>57,594</b>	<b>63,473</b>	<b>55,258</b>	<b>31,393</b>	<b>53,580</b>	<b>73,299</b>	<b>54,823</b>
Manley j	6,899	21,087	25,860	13,243	7,010	3,215	13,722	20,272	10,662	5,887	4,411	5,172	14,083	10,991
Minto j	2,615	2,005	3,652	5,276	3,017	301	1,419	4,782	4,381	2,361	505	781	2,850	2,690
Nenana j	26,889	25,340	12,464	17,932	13,253	5,929	11,201	15,500	14,207	3,799	6,781	5,819	14,984	10,298
Fairbanks j r	0	0	309	1,671	1,394	56	5,006	6,384	5,736	4,031	960	1,630	686	4,423
Other r s		10,222	2,283	2,347	1,039	352	2,249	2,230	1,481	3,472	1,713	2,269	3,249	2,229
<b>District 6 Tanana River Subtotal</b>	<b>36,403</b>	<b>58,654</b>	<b>44,568</b>	<b>40,469</b>	<b>25,713</b>	<b>9,853</b>	<b>33,597</b>	<b>49,168</b>	<b>36,467</b>	<b>19,550</b>	<b>14,370</b>	<b>15,471</b>	<b>35,851</b>	<b>30,630</b>
<b>Upper Yukon River Total</b>	<b>138,991</b>	<b>195,195</b>	<b>154,322</b>	<b>135,346</b>	<b>92,646</b>	<b>64,449</b>	<b>113,318</b>	<b>120,819</b>	<b>116,726</b>	<b>86,542</b>	<b>53,661</b>	<b>78,225</b>	<b>128,189</b>	<b>98,213</b>
<b>Alaska, Yukon River Total t</b>	<b>154,813</b>	<b>211,147</b>	<b>167,900</b>	<b>145,524</b>	<b>107,602</b>	<b>76,762</b>	<b>123,218</b>	<b>130,506</b>	<b>128,866</b>	<b>95,141</b>	<b>62,867</b>	<b>89,736</b>	<b>141,584</b>	<b>108,120</b>
<b>Alaska, Yukon Area Total</b>	<b>157,075</b>	<b>211,303</b>	<b>167,900</b>	<b>145,524</b>	<b>107,808</b>	<b>76,882</b>	<b>123,565</b>	<b>130,860</b>	<b>129,258</b>	<b>95,141</b>	<b>62,901</b>	<b>89,940</b>	<b>142,270</b>	<b>108,345</b>

a Historic estimated subsistence harvests are available in each year's respective Yukon Area Annual Management Report (1961 to 1998). Beginning in 1988 subsistence salmon harvest estimates have been generated from a stratified random sample of village households. Estimates include test fish catches given away. Includes commercial related harvest to produce roe sold, 1982-1988. Blanks indicate harvest information was not collected.

b The community was not surveyed, harvest estimates were calculated from calendar and post card replies.

c Average harvest includes 1988, 1989, 1992 and 1993.

d Due to floods in 1994, Hughes, Allakaket, and Alatna were not surveyed and the estimated harvest of fall chum salmon was zero.

f Alatna and Allakaket harvests are combined in 1989.

g Average harvest includes 1988 and 1990 through 1993.

h Harvests by Fairbanks subsistence permit holders who fished in District 5 near the Yukon River bridge crossing.

j In 1988 and 1989, permit and household interview data were expanded for permits not returned. Beginning in 1990, reported harvest is from returned permits only.

k Includes Birch Creek except in 1988, 1990 and 1991. A harvest of zero fall chum salmon has been estimated in all years surveyed.

m Circle and Central harvests are combined in 1989.

n Other permit holders who fished in District 5 but did not reside in the villages listed.

p Average harvest includes 1990 through 1993.

r Harvests by Fairbanks subsistence permit holders who fished in the Tanana River.

s Other permits holders who fished in District 6 but did not reside in the villages listed.

t Does not include the Coastal District.

Appendix B 4 Estimated coho salmon subsistence harvest by fishing district and by community of residence, Yukon Area, 1988-1999 a

Community	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	1989-1993 Average	1994-1998 Average
Hooper Bay	1,523 b	211 b			28	0	1	48	92	0	145	68	441 c	57
Scammon Bay	326 b	2 b			31	40	80	104	0	0	204	0	100 c	78
<b>Coastal District Subtotal</b>	<b>1,849</b>	<b>213</b>			<b>59</b>	<b>40</b>	<b>81</b>	<b>152</b>	<b>92</b>	<b>0</b>	<b>349</b>	<b>68</b>	<b>540</b>	<b>135</b>
Sheldon Point	169	487	78	35	441	78	52	419	138	51	229	51	224	178
Alakanuk	634	334	156	391	966	138	94	658	103	882	292	108	397	406
Emmonak	1,578	1,259	1,283	801	666	196	959	485	594	356	696	525	841	618
Kotlik	2,008	2,997	1,784	581	3,353	1,931	2,167	689	1,610	534	954	1,046	2,129	1,191
<i>District 1 Subtotal</i>	<i>4,389</i>	<i>5,077</i>	<i>3,301</i>	<i>1,808</i>	<i>5,426</i>	<i>2,343</i>	<i>3,272</i>	<i>2,251</i>	<i>2,445</i>	<i>1,823</i>	<i>2,171</i>	<i>1,730</i>	<i>3,591</i>	<i>2,392</i>
Mountain Village	1,314	2,385	1,754	868	1,971	447	968	921	276	1,089	954	665	1,485	842
Pitkas Point	1,015	601	52	347	641	349	364	554	691	427	305	302	398	468
St. Marys	2,132	370	463	1,270	2,130	102	614	154	292	329	290	536	867	336
Pilot Station	876	379	1,968	553	300	477	811	241	1,258	323	413	249	735	609
Marshall	1,767	1,304	2,107	259	1,545	320	1,124	272	958	256	335	1,041	1,107	589
<i>District 2 Subtotal</i>	<i>7,104</i>	<i>5,039</i>	<i>6,344</i>	<i>3,297</i>	<i>6,587</i>	<i>1,695</i>	<i>3,881</i>	<i>2,142</i>	<i>3,475</i>	<i>2,424</i>	<i>2,297</i>	<i>2,793</i>	<i>4,592</i>	<i>2,844</i>
Russian Mission	604	20	688	396	1,148	152	55	891	255	10	233	542	481	289
Holy Cross	935	517	338	944	105	88	171	0	0	20	100	62	398	58
Shageluk	128	0	0	0	296	39	137	0	189	736	67	6	67	226
<i>District 3 Subtotal</i>	<i>1,667</i>	<i>537</i>	<i>1,026</i>	<i>1,340</i>	<i>1,549</i>	<i>279</i>	<i>363</i>	<i>891</i>	<i>444</i>	<i>766</i>	<i>400</i>	<i>610</i>	<i>946</i>	<i>573</i>
<b>Lower Yukon River Total</b>	<b>13,160</b>	<b>10,653</b>	<b>10,671</b>	<b>6,445</b>	<b>13,562</b>	<b>4,317</b>	<b>7,516</b>	<b>5,284</b>	<b>6,364</b>	<b>5,013</b>	<b>4,868</b>	<b>5,133</b>	<b>9,130</b>	<b>5,809</b>
Anvik	97	40	236	347	202	115	95	10	44	24	20	282	188	39
Grayling	692	969	10	1,363	859	164	36	97	236	1,055	133	201	673	311
Kaitag	0	792	501	1,260	2,105	334	245	426	298	60	71	333	998	220
Nulato	234	276	845	75	435	37	27	25	149	444	34	170	334	136
Koyukuk	10	110	162	307	1,877	70	305	33	476	345	421	295	505	316
Galena	1,029	415	572	422	1,398	124	803	275	780	1,002	322	123	586	636
Ruby/Kokrines	2,169	1,069	974	410	1,299	308	1,957	607	376	474	1,459	620	812	975
<i>District 4 Yukon River Subtotal (Excluding the Koyukuk River)</i>	<i>4,231</i>	<i>3,671</i>	<i>3,300</i>	<i>4,184</i>	<i>8,175</i>	<i>1,152</i>	<i>3,468</i>	<i>1,473</i>	<i>2,359</i>	<i>3,404</i>	<i>2,460</i>	<i>2,024</i>	<i>4,096</i>	<i>2,633</i>
Huslia	201	150	235	150	233	9	47	307	18	50	128	15	155	110
Hughes	104	91	43	9	21	3	0 d	153	51	250	5	10	33	92
Allakaket	160	118	31	25	0	3	0 d	0	39	50	0	0	35	18
Alatna	18	0	5	83	0	0	0 d	0	0	0	0	0	18	0
Bettles	0	0	0	0	0	0	0	1	0	0	0	0	0	0
<i>Koyukuk River Subtotal</i>	<i>483</i>	<i>359</i>	<i>314</i>	<i>267</i>	<i>254</i>	<i>15</i>	<i>47</i>	<i>461</i>	<i>108</i>	<i>350</i>	<i>133</i>	<i>25</i>	<i>242</i>	<i>220</i>
<i>District 4 Subtotal</i>	<i>4,714</i>	<i>4,030</i>	<i>3,614</i>	<i>4,451</i>	<i>8,429</i>	<i>1,167</i>	<i>3,515</i>	<i>1,934</i>	<i>2,467</i>	<i>3,754</i>	<i>2,593</i>	<i>2,049</i>	<i>4,338</i>	<i>2,853</i>

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Community	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	1989-1993 Average	1994-1998 Average
Tanana	16,922	5,518	8,580	4,448	11,406	5,576	2,587	2,154	6,110	3,045	2,572	3,989	7,106	3,294
Rampart	842	87	591	58	75	38	99	0	5	34	20	126	170	32
Fairbanks f g	0	0	5	8	34	0	25	18	42	26	11	0	9	24
Stevens Village	604	208	479	0	20	0	0	1	2	1	63	0	141	13
Beaver	164	774	172	1	398	135	10	20	7	0	0	0	296	7
Fort Yukon h	370	406	727	380	341	5	963	4	157	251 j	39	124	372	283
Circle g	41	1	201	5	54	10	30	0	0	210	0	0	54	48
Central g	0	0	5	0	0	0	0	0	0	0	0	0	1	0
Eagle g	11	0	0	0	3	85	0	1	1	2	132	0	18	27
Other g j	0	165	450	12	0	0	0	7	0	0	2	2	125	2
<i>District 5 Yukon River Subtotal (Excluding Chandalar/Black Rivers)</i>	18,954	7,159	11,210	4,912	12,331	5,849	3,714	2,205	6,324	3,569	2,839	4,241	8,292	3,730
Venetie	0	2	348	12	45	135	4	0	264	7	0	0	108	55
Chalkyitsik	801	26	4	7	0	0	456	0	0	7	0	0	7	93
<i>Chandalar/Black River Subtotal</i>	801	28	352	19	45	135	460	0	264	14	0	0	116	148
<i>District 5 Subtotal</i>	19,755	7,187	11,562	4,931	12,376	5,984	4,174	2,205	6,588	3,583	2,839	4,241	8,408	3,878
Manley g	2,103	5,310	7,574	6,361	4,725	1,535	10,410	7,395	2,462	3,236	2,362	3,244	5,101	5,173
Minto g	2,729	1,179	818	526	614	300	2,616	338	1,223	364	31	0	687	914
Nenana g	25,369	7,593	7,381	10,171	8,895	1,314	9,387	7,142	7,883	5,147	3,519	4,023	7,071	6,616
Fairbanks g k	0	0	66	2,501	2,281	0	2,103	3,076	2,314	1,230	788	888	970	1,902
Other g m		4,759	1,774	2,002	1,039	1,155	1,973	851	1,011	1,618	774	1,259	2,146	1,245
<i>District 6 Tanana River Subtotal</i>	30,201	18,841	17,613	21,561	17,554	4,304	26,489	18,802	14,893	11,595	7,472	9,394	15,975	15,850
<b>Upper Yukon Area Total</b>	<b>54,670</b>	<b>30,058</b>	<b>32,789</b>	<b>30,943</b>	<b>38,359</b>	<b>11,455</b>	<b>34,178</b>	<b>22,941</b>	<b>23,948</b>	<b>18,932</b>	<b>12,904</b>	<b>15,684</b>	<b>28,721</b>	<b>22,581</b>
<b>Alaska, Yukon River Total n</b>	<b>67,830</b>	<b>40,711</b>	<b>43,460</b>	<b>37,388</b>	<b>51,921</b>	<b>15,772</b>	<b>41,694</b>	<b>28,225</b>	<b>30,312</b>	<b>23,945</b>	<b>17,772</b>	<b>20,817</b>	<b>37,850</b>	<b>28,390</b>
<b>Alaska, Yukon Area Total</b>	<b>69,679</b>	<b>40,924</b>	<b>43,460</b>	<b>37,388</b>	<b>51,980</b>	<b>15,812</b>	<b>41,775</b>	<b>28,377</b>	<b>30,404</b>	<b>23,945</b>	<b>18,121</b>	<b>20,885</b>	<b>38,391</b>	<b>28,524</b>

a Historic estimated subsistence harvests are available in each year's respective Yukon Area Annual Management Report (1961 to 1998). Beginning in 1988 subsistence salmon harvest estimates have been generated from a stratified random sample of village households. Estimates include test fish catches given away. Blanks indicate harvest information was not collected.

b The village was not surveyed, harvest estimates were calculated from calendar and post card replies.

c Average harvest includes 1988, 1989, 1992 and 1993.

d Due to floods in 1994, Hughes, Allakaket, and Alatna were not surveyed and the estimated harvest of coho salmon was zero.

f Harvests by Fairbanks subsistence permit holders who fished in District 5 near the Yukon River bridge crossing.

g In 1988 and 1989, permit and household interview data were expanded for permits not returned. Beginning in 1990, reported harvest is from returned permits only.

h Includes Birch Creek except in 1988, 1990 and 1991. A harvest of three coho salmon was estimated in 1997.

j Other permit holders who fished in District 5 but did not reside in the villages listed.

k Harvests by Fairbanks subsistence permit holders who fished in the Tanana River.

m Other permits holders who fished in District 6 but did not reside in the villages listed.

n Does not include the Coastal District.

Appendix B.5. Subsistence salmon harvests taken under authority of a permit in portions of District 5, Yukon Area, 1974-1999. a

Yukon River "Bridge" Area Subsistence Salmon Fishery b							
Year	Number of Permits Issued	Number of Permits Returned	Number Reporting Harvest	Reported Harvest			Coho
				Chinook	Summer Chum c	Fall Chum c	
1974	29	-	-	591	-	1,857	1,271
1975	19	-	-	727	-	778	70
1976	28	-	18	531	-	974	-
1977	38	-	-	467	-	2,567	-
1978	57	-	-	1,333	-	9,735	-
1979	55	-	41	2,194	-	12,374	-
1980	70	-	67	1,350	-	6,488	36
1981	57	-	24	1,095	-	12,034	-
1982	64	-	44	1,935	-	11,328	20
1983	68	-	46	2,672	-	15,059	-
1984	67	-	54	4,676	-	27,869	399
1985	55	-	42	2,618	-	21,832	33
1986	76	-	58	3,827	-	18,690	759
1987	16	-	14	1,818	2,091	7,631	6
1988	24	21	18	1,747	2,097	3,183	606
1989	26	20	13	2,483	574	1,157	309
1990	26	25	16	2,033	3,493	1,109	455
1991	52	46	34	2,529	1,295	3,953	20
1992	45	42	33	2,241	975	2,491	34
1993	49	47	36	3,767	492	2,915	16
1994	50	49	36	3,073	384	2,911	25
1995	59	59	39	3,253	954	2,244	59
1996	47	45	31	1,157	3,475	2,727	42
1997	44	42	26	1,588	683	491	26
1998	48	47	31	1,685	103	156	15
1999	66	64	47	1,653	356	701	2
Five Year Average 1994-1998	50	48	33	2,151	1,120	1,706	33
Ten Year Average 1989-1998	45	42	30	2,381	1,243	2,015	100

Upper Yukon River Subsistence Salmon Fishery d							
Year	Number of Permits Issued	Number of Permits Returned	Number Reporting Harvest	Reported Harvest			Coho
				Chinook	Summer Chum c	Fall Chum c	
1979	75	-	6	4,063	-	30,475	114
1980	48	-	39	3,649	-	18,477	6
1981	71	-	51	4,510	-	38,333	-
1982	60	-	61	3,833	-	15,432	-
1983	53	-	52	2,831	-	23,708	-
1984	58	-	54	2,543	-	21,675	17
1985	59	-	36	2,419	-	19,059	2
1986	40	-	52	4,148	-	20,701	43
1987	51	51	58 f	3,602	2,495	27,369	0
1988	58	57	50	2,783	2,134	9,078	101
1989	59	56	42	1,186	68	7,515	1
1990	81	75	54	3,746	1,629	14,992	206
1991	70	69	48	3,219	658	14,898	5
1992	85	79	54	2,984	409	12,009	57
1993	79	79	49	1,910	118	2,419	95
1994	79	76	51	3,093	145	12,844	30
1995	87	87	53	3,628	129	19,047	1
1996	86	84	51	3,458	528	20,861	1
1997	98	93	60	3,148	393	18,616	212
1998	101	95	54	3,562	55	630	132
1999	119	116	71	3,404	364	14,079	0
Five Year Average 1994-1998	90	87	54	3,378	250	14,400	75
Ten Year Average 1989-1998	83	79	52	2,993	413	12,383	74

a Prior to 1988 the reported harvest was expanded for permits not returned. Beginning in 1988, reported harvest was not expanded. Dashes in the table indicate the information is not available.

b That portion of the Yukon River drainage from Hess Creek to Dall River.

c Summer chum and fall chum salmon undifferentiated from 1974-1986

d That portion of the Yukon River drainage from Twenty-Two Mile Slough, above the village of Fort Yukon, to the United States/Canadian border.

f Some fishermen reporting harvests did not have permits.



Subdistrict 6-A Subsistence Salmon Fishery							
Year	Number of Permits Issued	Number of Permits Returned	Number Reporting Harvest	Reported Harvest			
				Chinook	Summer Chum	Fall Chum	Coho
1988 b	28	24	18	845	1,389	9,165	3,455
1989 b, c	29	28	24 d	651	1,918	25,266	5,292
1990 c	42	36	26	1,369	2,250	27,957	8,408
1991	45	41	31	420	1,716	17,472	8,486
1992	38	35	26	508	450	5,999	5,028
1993 c	42	41	22	331	784	2,617	1,317
1994 f	37	37	30	576	3,793	18,076	12,449
1995	41	38	29	456	4,898	23,522	11,344
1996	31	29	23	209	1,338	18,931	5,959
1997	33	32	21	887	542	10,621	3,703
1998	31	31	19	512	519	4,726	1,526
1999	24	24	14	137	525	5,712	3,464
Five Year Average 1994-1998	35	33	24	528	2,218	15,175	6,996

Subdistrict 6-B Subsistence Salmon Fishery							
Year	Number of Permits Issued	Number of Permits Returned	Number Reporting Harvest	Reported Harvest g			
				Chinook	Summer Chum	Fall Chum	Coho
1988	75	66	52	3,721	3,167	18,902	18,906
1989 h	60	51	37 d	455	363	18,506	8,453
1990 h	70	58	38	1,234	1,966	16,332	9,155
1991 h	87	78	51	1,796	2,373	21,629	11,971
1992 h	98	89	57	1,587	7,820	18,782	11,409
1993	99	89	38	1,341	5,976	7,166	2,987
1994	102	94	49	1,337	2,035	13,726	12,480
1995	98	98	59	1,322	6,712	25,364	7,458
1996	105	96	59	968	6,138	17,439	8,934
1997	103	95	55	1,825	3,282	8,729	7,892
1998	94	84	46	1,407	5,485	9,573	5,937
1999	83	79	47	1,487	2,129	9,757	5,930
Five Year Average 1994-1998	100	93	54	1,372	4,730	14,966	8,540

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## Subdistrict 6-C Subsistence Salmon Fishery

Year	Number of Permits Issued	Number of Permits Returned	Number Reporting Harvest	Reported Harvest			Coho j
				Chinook	Summer Chum	Fall Chum	
1973	22	-	4	26	771	886	-
1974	70	-	-	38	1,373	1,580	-
1975	36	-	-	32	751	864	-
1976	110	-	-	31	1,314	1,512	-
1977	89	-	33	81	118	607	-
1978	160	-	126	126	2,729	1,188	-
1979	246	-	199	264	2,384	4,459	-
1980	315	-	254	282	3,729	4,059	-
1981	346	-	228	440	3,239	5,770	-
1982	330	-	209	451	2,708	4,521	-
1983	259	-	147	475	2,276	3,830	-
1984	308	-	212	321	3,177	5,134	-
1985	291	-	155	326	2,646	3,937	-
1986	323	-	211	637	4,031	4,437	-
1987 k	217	-	123	531	2,739	0	0
1988	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0
1990 m	19	18	6	15	69	279	50
1991	149	142	98	299	980	1,080	1,089
1992	149	146	90	343	1,234	896	1,116
1993 n	0	0	0	0	0	0	0
1994 p, r	145	142	107	457	1,198	1,600	1,545
Five Year Average 1990-1994							
	92	90	60	223	696	771	760

## Upper Tanana River Drainage Subsistence Salmon Fishery

Year	Number of Permits Issued	Number of Permits Returned	Number Reporting Harvest	Reported Harvest			Coho
				Chinook	Summer Chum	Fall Chum	
1988	0	0	0	0	0	0	0
1989	2	2	2	5	0	39	0
1990	1	1	0	0	0	0	0
1991	8	7	6	0	0	288	14
1992	11	11	4	0	0	36	1
1993	10	10	8	0	0	5	0
1994	7	7	3	0	0	202	15
1995	50	46	12	0	0	88	0
1996	42	39	15	0	10	97	0
1997	61	58	26	0	0	200	0
1998	46	46	17	0	0	71	9
1999	29	29	13	0	0	2	0
Five Year Average 1994-1998							
	41	39	15	0	2	132	5

- a Prior to 1988, salmon harvests were expanded for permits not returned. Beginning in 1988, the reported harvests were not expanded. Dashes in the table indicate the information is not available.
- b Many Subdistrict 6-A fishermen did not obtain a permit in 1988 and 1989.
- c Includes salmon given away as part of the department's test fishing project in Manley.
- d Includes harvests reported by fishermen who did not have permits.
- f Beginning in 1994, a separate Kantishna River drainage permit was required. The Subdistrict 6-A harvest totals include those from the Kantishna River drainage.
- g Includes small numbers of salmon harvested and reported on the Tolovana River drainage (Subdistrict 6-B) subsistence pike permit, established in 1993.
- h Includes salmon given away as part of the department's test fish project in Nenana.
- j Prior to 1988 fall chum and coho salmon were not reported as separate species.
- k Personal use fishery established for nonrural residents beginning in July of 1987.
- m Some fishermen had both personal use and subsistence permits. The McDowell Decision became effective July 1990. (midway through the season), and stated that all Alaskan residents were eligible subsistence participants.
- n Personal use fishery was established for those fishing for salmon in the Fairbanks Nonsubsistence Area, which includes Subdistrict 6-C.
- p No personal use permits were issued in 1994 for this area.
- r After 1994 subsistence regulations were repealed within the Fairbanks Nonsubsistence Area, which includes Subdistrict 6-C.

## Subdistrict 6-A Personal Use Salmon Fishery

Year	Number of Permits Issued	Number of Permits Returned	Number Reporting Harvest	Reported Harvest			Coho
				Chinook	Summer Chum	Fall Chum	
1987	0	0	0			0	
1988	1	1	0	0	0	0	0
1989	1	1	1	0	4	0	0
1990	1	1	0	0	0	0	0
1991	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0
1997 b	0	0	0	0	0	0	0

## Subdistrict 6-B Personal Use Salmon Fishery

Year	Number of Permits Issued	Number of Permits Returned	Number Reporting Harvest	Reported Harvest			Coho
				Chinook	Summer Chum	Fall Chum	
1987	0	0	0			0	
1988	1	1	1	306	60	40	22
1989	1	1	1	56	220	0	0
1990	4	4	3	9	12	40	35
1991	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0
1997 b	0	0	0	0	0	0	0

## Subdistrict 6-C Personal Use Salmon Fishery

Year	Number of Permits Issued	Number of Permits Returned	Number Reporting Harvest	Reported Harvest			Coho
				Chinook	Summer Chum	Fall Chum	
1987	132 c	-	60 d			3,316	2,465
1988	208	162	120	317	1,182	2,074	1,125
1989	175	160	112	397	991	1,770	731
1990	152	144	102	442	918	1,353	1,120
1991 f	0	0	0	0	0	0	0
1992 f	0	0	0	0	0	0	0
1993	133	131	79	426	674	163	0
1994 f	0	0	0	0	0	0	0
1995	139	138	91	399	780	863	417
1996	129	125	73	215	905	356	198
1997	112	109	61	313	391	284	350
1998	103	101	52	357	84	2	9
1999 g	103	103	67	331	382	261	147
Five Year Average							
1993 and							
1995-1998							
	123	121	71	342	567	334	195

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Upper Tanana River Personal Use Salmon Fishery							
Year	Number of Permits Issued	Number of Permits Returned	Number Reporting Harvest	Reported Harvest			
				Chinook	Summer Chum	Fall Chum	Coho
1987	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0
1991 h	0	0	0	0	0	0	0

- a Personal use fishery during 1987 applied to nonrural residents harvesting only fall chum salmon. Beginning in 1988, nonrural personal use fishing applied to all salmon species and reported harvest is from returned permits only. Effective July 1, 1990 all Alaskan residents became eligible for subsistence fishing permits. In 1993 the Board established the Fairbanks Nonsubsistence Area (FNA), this designated fishermen residing in the area as personal use harvesters. In 1994 a Superior Court decision invalidated the FNA and subsistence regulations applied. In 1995 the Board amended the FNA to apply personal use regulations to all fishermen fishing in the area. Dashes in the table indicate the information is not available.
- b After 1997 the regulations did not provide for a personal use fishery in these areas.
- c Includes 60 former subsistence fishermen who were reissued personal use permits to fish for fall chum salmon
- d Some fishing families used both subsistence and personal use permits.
- f From July 1, 1990 through 1992, and in 1994, the regulations did not provide for a personal use fishery in this area.
- g Does not include four whitefish and sucker fishery permit holders, two of which fished, that reported a total harvest of one fall chum and six coho salmon in 1999.
- h After July 1, 1991 the regulations did not provide for a personal use salmon fishery in this area.

Appendix B.8. Estimated number of salmon distributed from test fish projects, Yukon Area, 1992 to 1999. a

	Year	Set Gillnet Test Fish Lower Yukon	Drift Gillnet Test Fish Projects				Test Fish Wheel Projects b					Total
			Mountain Village	Pilot Station	Marshall	Kaltag	Galena	Manley	Nenana	Tanana	Fort Yukon	
Chinook Salmon	1992	1,715	-	-	-	-	-	0	113	-	-	1,828
	1993	1,584	-	471	-	-	-	0	0	0	-	2,055
	1994	1,985	-	334	-	-	-	0	0	0	-	2,319
	1995	1,715	1	166	-	-	2	1	0	0	0	1,885
	1996	1,355	0	0	-	-	-	0	0	0	0	1,355
	1997	1,825	2	330	-	-	-	0	0	0	-	2,157
	1998	1,035	8	435	-	-	-	0	0	0	-	1,478
	1999	1,656	1	359	773	1	-	0	0	0	-	2,790
Five Year Average 1994 to 1998		1,583	-	253	-	-	-	0	0	0	-	1,839
Summer Chum Salmon	1992	3,989	-	-	-	-	-	0	112	-	-	4,101
	1993	4,111	-	2,098	-	-	-	33	0	0	-	6,242
	1994	7,060	-	2,998	-	-	-	0	0	0	-	10,058
	1995	6,382	0	1,875	-	-	57	50	0	0	0	8,364
	1996	7,052	0	276	-	-	-	0	0	0	0	7,328
	1997	4,539	0	2,420	-	-	-	0	0	0	-	6,959
	1998	2,290	0	2,209	-	-	-	0	0	147	-	4,646
	1999	2,717	0	1,636	181	0	-	0	0	0	-	4,534
Five Year Average 1994 to 1998		5,465	-	1,956	-	-	-	10	0	29	-	7,471
Fall Chum Salmon	1992	2,462	-	-	-	-	-	0	110	-	-	2,572
	1993	3,692	-	652	-	-	-	65	0	0	-	4,409
	1994	2,566	-	1,349	-	-	-	0	7	1,895	-	5,817
	1995	2,408	523	541	-	-	199	194	0	1,876	1,570	7,311
	1996	1,421	319	150	-	-	-	0	0	0	1,081	2,971
	1997	1,466	962	997	-	-	-	0	0	0	-	3,425
	1998	2,000	664	1,110	-	-	-	0	0	0	-	3,774
	1999	4,061	1,008	968	0	483	-	0	0	0	-	6,520
Five Year Average 1994 to 1998		1,972	-	829	-	-	-	39	1	754	-	4,660
Coho Salmon	1992	2,557	-	-	-	-	-	0	0	-	-	2,557
	1993	1,210	-	222	-	-	-	0	0	0	-	1,432
	1994	2,033	-	786	-	-	-	0	0	266	-	3,085
	1995	579	559	205	-	-	0	0	0	164	0	1,507
	1996	755	228	25	-	-	-	0	0	0	0	1,008
	1997	593	309	283	-	-	-	0	0	0	-	1,185
	1998	792	567	364	-	-	-	0	0	0	-	1,723
	1999	649	2	180	0	70	-	0	0	0	-	901
Five Year Average 1994 to 1998		950	-	333	-	-	-	0	0	86	-	1,702

a Dashes indicate test fish project was not in operation.

b Does not include salmon that were accounted for by using the survey or permit methods.

Appendix B.9. Summary of responses of surveyed households which indicated that their subsistence salmon needs were not met, Yukon Area, 1992 to 1999.

Response Summary Category	1992		1993		1994		1995		1996	
	Number of Responses	Percent of Total	Number of Responses	Percent of Total	Number of Responses	Percent of Total	Number of Responses	Percent of Total	Number of Responses	Percent of Total
Due to environmental conditions, i.e., high water	54	19.9%	33	6.4%	42	12.2%	14	6.8%	11	5.2%
Working in another occupation	35	12.9%	57	11.1%	52	15.1%	26	12.6%	34	16.0%
No gear - boat, net, motor, gas	30	11.0%	64	12.5%	32	9.3%	32	15.5%	24	11.3%
No helper to harvest or process fish	15	5.5%	11	2.1%	19	5.5%	14	6.8%	5	2.3%
Busy doing other things	21	7.7%	25	4.9%	15	4.3%	28	13.5%	33	15.5%
Medical reasons or elderly	23	8.5%	34	6.6%	20	5.8%	25	12.1%	21	9.9%
Poor run of fish	19	7.0%	41	8.0%	4	1.2%	1	0.5%	12	5.6%
Out of town	9	3.3%	6	1.2%	13	3.8%	12	5.8%	12	5.6%
Will buy or be given more fish	10	3.7%	6	1.2%	1	0.3%	0	0.0%	4	1.9%
Not enough fish caught	17	6.3%	22	4.3%	11	3.2%	8	3.9%	24	11.3%
Miscellaneous reasons, includes "No reason given"	26	9.6%	40	7.8%	36	10.4%	24	11.6%	15	7.0%
Still fishing	13	4.8%	6	1.2%	3	0.9%	6	2.9%	1	0.5%
Department fishing regulations/restrictions	0	0.0%	131	25.5%	70	20.3%	0	0.0%	6	2.8%
Didn't fish - normally don't use fish	0	0.0%	29	5.6%	27	7.8%	17	8.2%	24	11.3%
Not enough available to share/barter	0	0.0%	9	1.8%	0	0.0%	0	0.0%	4	1.9%
<b>TOTALS</b>	<b>272</b>		<b>514</b>		<b>345</b>		<b>207</b>		<b>230</b>	
<b>Total Number of Households Contacted</b>	<b>870</b>		<b>979</b>		<b>933</b>		<b>1,011</b>		<b>951</b>	
<b>Percentage Not Met</b>	<b>31.3%</b>		<b>52.5%</b>		<b>37.0%</b>		<b>20.5%</b>		<b>24.2%</b>	

-Continued-

Response Summary Category	1997		1998		1999		1992 to 1998 Average	
	Number of Responses	Percent of Total	Number of Responses	Percent of Total	Number of Response	Percent of Total	Number of Responses	Percent of Total
Due to environmental conditions, i.e., high water	15	7.0%	32	5.4%	15	3.9%	29	9.6%
Working in another occupation	37	17.4%	37	6.2%	32	8.3%	40	12.5%
No gear - boat, net, motor, gas	16	7.5%	33	5.6%	28	7.3%	33	10.2%
No helper to harvest or process fish	11	5.2%	7	1.2%	10	2.6%	12	4.4%
Busy doing other things	14	6.6%	18	3.0%	24	6.2%	22	6.7%
Medical reasons or elderly	16	7.5%	16	2.7%	26	6.8%	22	7.2%
Poor run of fish	13	6.1%	281	47.4%	69	17.9%	53	11.7%
Out of town	6	2.8%	10	1.7%	7	1.8%	10	3.1%
Will buy or be given more fish	0	0.0%	0	0.0%	2	0.5%	3	0.9%
Not enough fish caught	20	9.4%	34	5.7%	37	9.6%	19	5.5%
Miscellaneous reasons, includes "No reason given"	36	16.9%	51	8.6%	95	24.7%	33	10.8%
Still fishing	5	2.3%	5	0.8%	11	2.9%	6	2.2%
Department fishing regulations/restrictions	2	0.9%	22	3.7%	3	0.8%	33	8.4%
Didn't fish - normally don't use fish	18	8.5%	14	2.4%	19	4.9%	18	5.4%
Not enough available to share/barter	4	1.9%	33	5.6%	7	1.8%	7	1.5%
<b>TOTALS</b>	213		593		385		357	
<b>Total Number of Households Contacted</b>	915		970		1,024		946	
<b>Percentage Not Met</b>	23.3%		61.1%		37.6%		37.8%	

Appendix B 10. Estimated pink salmon subsistence harvest by residents of surveyed villages, Yukon Area, 1994 to 1999. a

Community	1994 b		1995		1996		1997		1998		1999		Even Years Average	Odd Years Average	1994 to 1999 Average
	Est. Total	CI (95%) (+/-)	Est. Total	CI (95%) (+/-)	Est. Total	CI (95%) (+/-)	Est. Total	CI (95%) (+/-)	Est. Total	CI (95%) (+/-)	Est. Total	CI (95%) (+/-)	Estimated Total	Estimated Total	Estimated Total
Hooper Bay	734	760	326	175	3,212	2,075	265	286	1,941	1,110	99	23	1,962	230	1,096
Scammon Bay	1,319	1,063	559	596	305	399	0	0	1,791	1,552	527	619	1,138	362	750
Coastal District	2,053	1,307	885	621	3,517	2,113	265	286	3,732	1,908	626	620	3,101	592	1,846
Sheldon's Point	1,388	218	1	0	262	129	1	1	299	82	0	0	650	1	325
Alakanuk	54	31	124	132	35	52	33	34	239	172	0	0	109	52	81
Emmonak	1,451	821	5	5	46	0	35	0	145	112	17	28	547	19	283
Kotlik	1,340	1,279	2	1	100	0	0	0	907	791	15	19	782	6	394
District 1	4,233	1,536	132	132	443	139	69	34	1,590	822	32	33	2,089	78	1,083
Mountain Village	806	280	35	15	611	573	10	0	753	729	0	0	723	15	369
Pitkas Point	163	142	4	0	280	96	101	24	330	128	12	10	258	39	148
St. Mary's	850	327	0	0	42	27	4	7	467	785	1	0	453	2	227
Pilot Station	32	31	0	0	0	0	0	0	0	0	8	11	11	3	7
Marshall	880	1,159	6	0	0	0	0	0	0	0	0	0	293	2	148
District 2	2,731	1,245	45	15	933	582	115	24	1,550	1,079	21	14	1,738	60	899
Russian Mission	200	0	0	0	0	0	0	0	211	5	0	0	137	0	69
Holy Cross	89	93	0	0	140	175	0	0	150	131	0	0	126	0	63
Shageluk	0	0	0	0	40	0	0	0	1,256	885	0	0	432	0	216
District 3	289	93	0	0	180	175	0	0	1,617	894	0	0	695	0	348
Anvik	475	520	0	0	0	0	0	0	50	0	0	0	175	0	88
Grayling	451	574	0	0	4	2	0	0	649	161	1	0	368	0	184
Kaltag	0	0	0	0	0	0	11	0	1	0	1	0	0	4	2
Nulato	4	2	0	0	0	0	0	0	0	0	0	0	1	0	1
Koyukuk	4	0	0	0	0	0	23	29	0	0	0	0	1	8	5
Galena	61	6	0	0	52	0	0	0	0	0	0	0	38	0	19
Ruby	0	0	0	0	3	0	0	0	0	0	0	0	1	0	1
Huslia	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hughes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Allakaket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Alatna	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bettles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
District 4	995	775	0	0	59	2	34	29	700	161	2	0	585	12	298
Tanana	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rampart	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Stevens Village	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Birch Creek	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Beaver	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Yukon	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Venetie	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chalkyitsik	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
District 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Survey Totals</b>	<b>10,301</b>	<b>2,496</b>	<b>1,062</b>	<b>635</b>	<b>5,132</b>	<b>2,204</b>	<b>483</b>	<b>290</b>	<b>9,189</b>	<b>2,511</b>	<b>681</b>	<b>621</b>	<b>8,207</b>	<b>742</b>	<b>4,475</b>

a Includes 95 percent confidence interval, CI (95%).

b Due to floods in 1994, Hughes, Allakaket, and Alatna were not surveyed and the estimated harvest of pink salmon was zero.



Appendix B.11. Summary of responses of salmon harvested but not utilized (lost), provided by surveyed households, Yukon Area, 1996 to 1999.

		1996		1997		1998		1999		1996 to 1999 Average		
		Number of Salmon	Number of Responses	Number of Salmon	Number of Responses	Number of Salmon	Number of Responses	Number of Salmon	Number of Responses	Number of Salmon Lost	Percentage of Salmon Lost	Percentage of Responses
Salmon Lost	Chinook	162	8	486	13	526	34	100	7	319	4%	28%
	Summer Chum	27,953	35	3,333	23	2,163	24	344	19	8,448	94%	46%
	Fall Chum	70	5	92	5	160	4	65	5	97	1%	9%
	Coho	10	1	25	2	0	0	25	2	15	0%	2%
	Pink	50	1	0	0	3	1	0	0	13	0%	1%
	Unknown Species	2	1	6	3	74	15	298	13	95	1%	14%
	Number of Individual Responses a		51		46		78		46		100%	100%
Reason Provided	Bears	21,918	22	2,275	8	1,534	12	50	3	6,444	72%	23%
	Birds	98	8	100	1	220	5	10	1	107	1%	8%
	Otter	22	3	0	0	0	0	0	0	6	0%	2%
	Weather	49	3	30	1	139	5	10	1	57	1%	5%
	Disease b	0	0	106	6	458	14	50	5	154	2%	13%
	Spoiled	10	1	350	5	485	19	59	1	226	3%	13%
	No Reason Provided	6,150	10	1,082	21	90	14	653	29	1,994	22%	37%
Number of Individual Responses a			47		42		69		40		100%	100%
Total Salmon Lost		28,247		3,943		2,926		832		8,987		

a The number of individual responses by species and reason. An individual household may report more than one species or reason for salmon loss.

b The number of reported diseased chinook salmon consisted of zero, 65, 206, and 40 for the years 1996 through 1999 respectively.

Appendix B.12. Estimated or reported subsistence and personal use harvest of miscellaneous non-salmon fish species, Yukon Area, 1993 to 1999.

	1993	1994	1995	1996	1997	1998	1999	Five Year Average 1994 to 1998
<b>Survey Estimates <sup>a</sup></b>								
Whitefish	70,479	84,734	58,660	63,610	77,630	70,261	50,748	70,979
Pike	11,787	28,515	17,646	18,833	29,540	22,459	16,928	23,399
Sheefish	12,039	17,117	12,186	17,793	19,538	19,159	12,550	17,159
<b>Survey Reported</b>								
Burbot	316	9,181	4,602	13,654	6,381	6,704	11,545	8,104
Lamprey	2	2,565	5,122	4,630	2,533	2,580	30,536	3,486
Tomcod	2,069	1,875	4,724	4,554	6,088	5,401	2,399	4,528
Grayling	122	1,559	1,285	1,664	1,600	1,578	1,476	1,537
Suckers	67	304	210	191	667	128	104	300
Arctic Char	2	174	265	210	131	206	131	197
Blackfish	8,810	190,736	233,890	145,752	275,469	302,623	165,252	229,694
<b>Permit Reported</b>								
Whitefish	3,139	3,509	3,172	5,474	5,157	4,019	3,734	4,266
Pike	1,150	1,214	1,280	2,113	1,978	793	812	1,476
Sheefish	49	361	87	127	190	137	176	180
Burbot	66	196	187	105	215	137	101	168
Grayling	-	3	10	315	154	55	439	107
Suckers	-	68	456	1,156	858	459	986	599
<b>Yukon Area Totals</b>								
Whitefish	73,618	88,243	61,832	69,084	82,787	74,280	54,482	75,245
Pike	12,937	29,729	18,926	20,946	31,518	23,252	17,740	24,874
Sheefish	12,088	17,478	12,273	17,920	19,728	19,296	12,726	17,339
Burbot	382	9,377	4,789	13,759	6,596	6,841	11,646	8,272
Lamprey	2	2,565	5,122	4,630	2,533	2,580	30,536	3,486
Tomcod	2,069	1,875	4,724	4,554	6,088	5,401	2,399	4,528
Grayling	122	1,562	1,295	1,979	1,754	1,633	1,915	1,645
Suckers	67	372	666	1,347	1,525	587	1,090	899
Arctic Char	2	174	265	210	131	206	131	197
Blackfish	8,810	190,736	233,890	145,752	275,469	302,623	165,252	229,694

<sup>a</sup> Subsistence finfish estimates in surveyed communities is based on a stratified random sample of households as designed for the estimation of subsistence salmon harvests.

Appendix B.13. Households with dogs, number of dogs, and salmon fed to dogs, as estimated in surveyed villages or reported in permit areas, Yukon Area, 1990-1999. a

Districts Survey or Permit	Number of Households with Dogs	Number of Dogs	Summer Chum Salmon Fed to Dogs	Fall Chum Salmon Fed to Dogs	Coho Salmon Fed to Dogs	Total Salmon Fed to Dogs
<b>1990</b>						
Coastal District Survey	-	-	-	-	-	-
District 1 Survey	-	455	2,859	372	0	3,231
District 2 Survey	-	775	3,278	415	3,665	7,358
District 3 Survey	-	272	8,248	120	166	8,534
District 4 Survey	-	1,385	91,256	6,911	2,511	100,678
District 5 Survey	-	1,286	5,697	72,424	9,118	87,239
District 5 Permit b	-	-	-	-	-	-
District 6 Permit	-	-	-	-	-	-
<b>Totals</b>	<b>0</b>	<b>4,173</b>	<b>111,338</b>	<b>80,242</b>	<b>15,460</b>	<b>207,040</b>
<b>1991</b>						
Coastal District Survey	-	-	-	-	-	-
District 1 Survey	-	349	30	0	16	46
District 2 Survey	-	543	723	652	874	2,249
District 3 Survey	-	145	1,747	150	0	1,897
District 4 Survey	-	1,660	169,866	903	591	171,360
District 5 Survey	-	1,520	28,518	54,657	2,754	85,929
District 5 Permit b	49	400	-	-	-	11,522
District 6 Permit	220	1,980	-	-	-	19,479
<b>Totals</b>	<b>269</b>	<b>6,597</b>	<b>200,884</b>	<b>56,362</b>	<b>4,235</b>	<b>292,482</b>
<b>1992</b>						
Coastal District Survey	133	513	659	0	0	659
District 1 Survey	262	617	512	1,000	153	1,665
District 2 Survey	285	971	694	247	2,237	3,178
District 3 Survey	113	507	4,893	74	37	5,004
District 4 Survey	436	2,065	139,513	6,950	3,323	149,786
District 5 Survey	323	1,577	12,897	38,529	14,529	65,955
District 5 Permit b	52	492	-	-	-	7,026
District 6 Permit	255	2,270	-	-	-	18,115
<b>Totals</b>	<b>1,859</b>	<b>9,012</b>	<b>159,168</b>	<b>46,800</b>	<b>20,279</b>	<b>251,388</b>
<b>1993</b>						
Coastal District Survey	150	391	0	0	0	0
District 1 Survey	280	690	654	70	22	746
District 2 Survey	232	880	794	260	670	1,724
District 3 Survey	118	447	2,671	734	162	3,567
District 4 Survey	435	1,645	44,793	3,905	579	49,277
District 5 Survey	348	1,840	5,490	38,888	5,147	49,525
District 5 Permit b	54	1,031	-	-	-	1,133
District 6 Permit	143	1,857	-	-	-	1,547
<b>Totals</b>	<b>1,760</b>	<b>8,781</b>	<b>54,402</b>	<b>43,857</b>	<b>6,580</b>	<b>107,519</b>
<b>1994</b>						
Coastal District Survey	161	367	1,287	0	0	1,287
District 1 Survey	288	819	267	144	384	795
District 2 Survey	286	1,074	1,066	653	2,470	4,189
District 3 Survey	123	413	5,279	0	162	5,441
District 4 Survey c	427	1,649	92,127	4,720	2,916	99,763
District 5 Survey	355	1,426	10,903	51,674	4,422	66,999
District 5 Permit b	103	534	-	-	-	9,824
District 6 Permit	212	2,269	-	-	-	34,111
<b>Totals</b>	<b>1,955</b>	<b>8,551</b>	<b>110,929</b>	<b>57,191</b>	<b>10,354</b>	<b>222,409</b>
<b>1995</b>						
Coastal District Survey	158	596	2,919	214	0	3,133
District 1 Survey	223	391	531	43	7	581
District 2 Survey	213	677	1,587	436	979	3,002
District 3 Survey	111	347	8,450	265	100	8,815
District 4 Survey	423	1,830	183,386	9,092	1,151	193,629
District 5 Survey	356	1,442	6,222	50,680	2,107	59,009
District 5 Permit b	54	495	-	-	-	17,980
District 6 Permit	103	1,723	-	-	-	50,731
<b>Totals</b>	<b>1,641</b>	<b>7,501</b>	<b>203,095</b>	<b>60,730</b>	<b>4,344</b>	<b>336,880</b>

- Continued -

Appendix B.13. (Page 2 of 2)

Districts Survey or Permit	Number of Households with Dogs	Number of Dogs	Summer Chum Salmon Fed to Dogs	Fall Chum Salmon Fed to Dogs	Coho Salmon Fed to Dogs	Total Salmon Fed to Dogs <sup>a</sup>
<b>1996</b>						
Coastal District Survey	159	406	0	0	0	0
District 1 Survey	298	682	1,847	250	38	2,135
District 2 Survey	251	1,044	1,460	1,724	1,423	4,607
District 3 Survey	134	513	3,558	0	0	3,558
District 4 Survey	468	1,607	130,575	5,771	1,324	137,670
District 5 Survey	325	1,289	10,155	48,836	5,966	64,957
District 5 Permit <sup>b</sup>	53	293	-	-	-	14,345
District 6 Permit	176	1,907	-	-	-	43,590
<b>Totals</b>	<b>1,864</b>	<b>7,741</b>	<b>147,595</b>	<b>56,581</b>	<b>8,751</b>	<b>270,862</b>
<b>1997</b>						
Coastal District Survey	174	494	837	0	0	837
District 1 Survey	255	683	103	0	0	103
District 2 Survey	301	1,075	779	498	142	1,419
District 3 Survey	111	492	11,418	400	746	12,564
District 4 Survey	430	1,209	63,850	4,481	3,141	71,472
District 5 Survey	254	1,146	2,943	33,188	2,961	39,092
District 5 Permit <sup>b</sup>	95	569	-	-	-	19,584
District 6 Permit	156	1,898	-	-	-	12,813
<b>Totals</b>	<b>1,776</b>	<b>7,566</b>	<b>79,930</b>	<b>38,567</b>	<b>6,990</b>	<b>157,884</b>
<b>1998</b>						
Coastal District Survey	185	503	0	0	0	0
District 1 Survey	259	555	1,711	270	0	1,981
District 2 Survey	293	966	682	110	137	929
District 3 Survey	106	394	4,288	32	202	4,522
District 4 Survey	560	1,731	14,468	3,394	1,935	19,797
District 5 Survey	356	1,342	2,029	29,448	2,680	34,157
District 5 Permit <sup>b</sup>	113	598	-	-	-	1,262
District 6 Permit	136	1,610	-	-	-	22,311
<b>Totals</b>	<b>2,008</b>	<b>7,699</b>	<b>23,178</b>	<b>33,254</b>	<b>4,954</b>	<b>84,959</b>
<b>1999</b>						
Coastal District Survey	163	276	135	0	0	135
District 1 Survey	252	451	254	20	25	299
District 2 Survey	312	982	778	52	1,277	2,107
District 3 Survey	95	374	4,153	50	240	4,443
District 4 Survey	481	1,502	15,546	3,399	1,513	20,458
District 5 Survey	273	1,233	1,436	36,006	3,844	41,286
District 5 Permit <sup>b</sup>	141	739	-	-	-	11,013
District 6 Permit	107	1,321	-	-	-	13,256
<b>Totals</b>	<b>1,824</b>	<b>6,878</b>	<b>22,302</b>	<b>39,527</b>	<b>6,899</b>	<b>92,997</b>
<b>1992-1998 Average</b>						
Coastal District Survey	160	467	815	31	0	845
District 1 Survey	266	634	804	254	86	1,144
District 2 Survey	266	955	1,009	561	1,151	2,721
District 3 Survey	117	445	5,794	215	201	6,210
District 4 Survey	454	1,677	95,530	5,473	2,053	103,056
District 5 Survey	331	1,437	7,234	41,606	5,402	54,242
District 5 Permit <sup>b</sup>	75	573	-	-	-	10,165
District 6 Permit	169	1,933	-	-	-	26,174
<b>Totals</b>	<b>1,838</b>	<b>8,122</b>	<b>111,185</b>	<b>48,140</b>	<b>8,893</b>	<b>204,557</b>

<sup>a</sup> Beginning in 1993, the estimated number of salmon includes those retained from subsistence and commercial (commercial-related) harvests. Dashes indicate information was not collected.

<sup>b</sup> Permit totals do not include the community of Stevens Village.

<sup>c</sup> Does not include the villages of Hughes, Allakaket and Alatna which were not surveyed due to a major flood event.



## APPENDIX C

### YUKON RIVER DRAINAGE SUBSISTENCE SALMON SURVEY AND PERMIT HARVEST FORMS



# Appendix C.1. Example of the subsistence salmon harvest calendar mailed to Lower Yukon Area fishermen, 1999.

May 1999

Dear Subsistence Fisherman:

The Yukon River drainage subsistence salmon harvest reporting calendar is provided by the Alaska Department of Fish and Game (ADF&G), Division of Commercial Fisheries. Please record the daily number of salmon harvested for your household on this calendar. Include salmon that were caught by your household but given to other households. Do not include fish caught by other households and given to you. Additionally, include on this calendar all salmon that were caught to feed dogs. However, do not include salmon sold in the round when commercial fishing or female salmon from which the roe was stripped and sold separately.

At the end of your subsistence salmon season, close the calendar by applying tape to the appropriately marked areas (see back), and place the self-addressed, postage-paid calendar in the mail (NO POSTAGE IS REQUIRED), or have the calendar available for pickup by our surveyor during post season surveys.


**\$200 LOTTERY!      \$200 LOTTERY!      \$200 LOTTERY!**

Each household that returns a properly completed subsistence salmon harvest reporting calendar will get a chance to win a \$200 prize. To qualify for the lottery, the original calendar must be received at the ADF&G Fairbanks office by November 30, 1999 with the return address label and household identification number intact. Each calendar must have the addressed household's complete subsistence harvest record for the 1999 fishing season. If no one in the household fished for subsistence salmon in 1999, the "DID NOT FISH" box on the last page must be checked. A household that completes and returns its calendar will be drawn at random to receive \$200. The drawing will be held December 1, 1999.



*We would like to congratulate Mr. Nick Asetekluk of Russian Mission who was the 1998 lottery winner.*

The information obtained from these calendars and the surveys is used to document the subsistence salmon harvest and needs. If you have any questions or comments, please call (907) 459-7274.

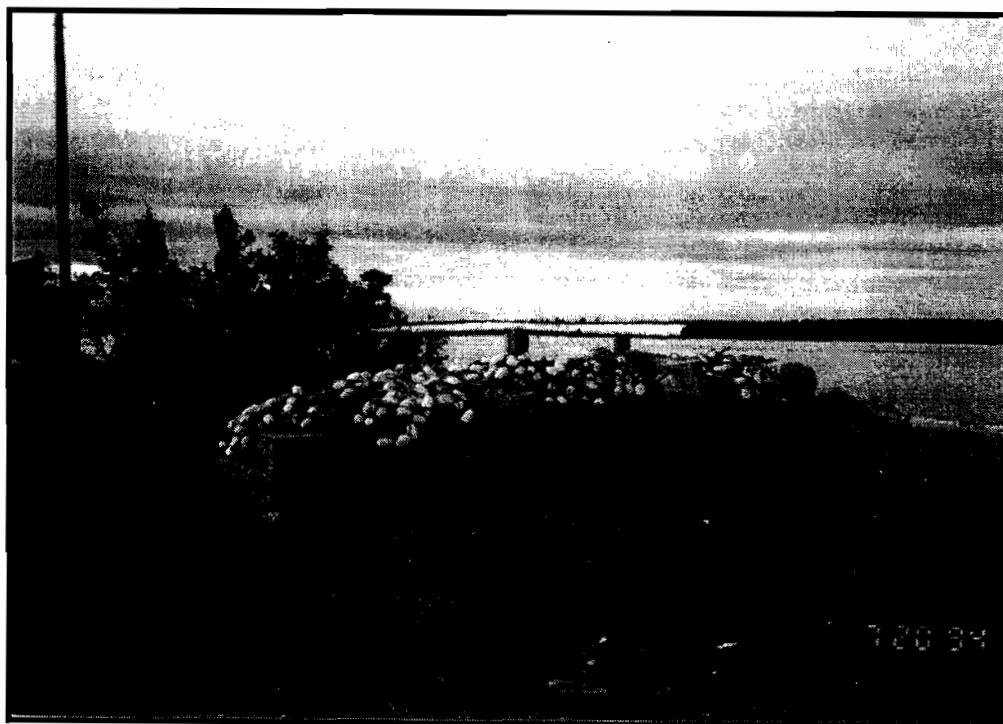
We hope you have a successful fishing season. THANK YOU.

	KEY	SPECIES	COMMON LOCAL NAMES
	Early Season	Chinook Salmon Summer Chum Salmon Pink Salmon	King, Duryaqvak, Daryukiaq, Taryaqvak, Kiagiaq, Chluk-cho Dog, Chum, Kavlanak, Kundekluk, Turmarluk, Poke Fish, Early Chum, Iqelluk, Tegmaamuk Humpy, Amaqayak, Chukpak
	Late Season	Fall Chum Salmon Coho Salmon	Silver, Okhiq, Oklek, Dog, Late Chum, Red Chum, Otkesq, Oqlesq, Schee, Dalayak, Uqurliq, Nar'aariq Chinook, Silver, Red, Redfish, Gakiyayak, Kakeyak, Kakeyak, Gageyak, Crooked-Nose Fish, Jack, Oqotolit, Net-lac

MAY 1999


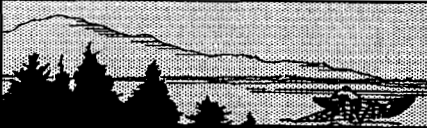
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
<b>LOWER YUKON SUBSISTENCE SALMON CALENDAR</b>						
1 King _____ Dog _____						
2 King _____ Dog _____	3 King _____ Dog _____	4 King _____ Dog _____	5 King _____ Dog _____	6 King _____ Dog _____	7 King _____ Dog _____	8 King _____ Dog _____
9 King _____ Dog _____	10 King _____ Dog _____	11 King _____ Dog _____	12 King _____ Dog _____	13 King _____ Dog _____	14 King _____ Dog _____	15 King _____ Dog _____
16 King _____ Dog _____	17 King _____ Dog _____	18 King _____ Dog _____	19 King _____ Dog _____	20 King _____ Dog _____	21 King _____ Dog _____	22 King _____ Dog _____
23 King _____ Dog _____	24 King _____ Dog _____	25 King _____ Dog _____	26 King _____ Dog _____	27 King _____ Dog _____	28 King _____ Dog _____	29 King _____ Dog _____
30 King _____ Dog _____	31 King _____ Dog _____					





King salmon nets, Emmonak, Alaska.

Photo by: Bonnie Borba, Division of Commercial Fisheries, Fairbanks

 <h1 style="text-align: center;">JUNE 1999</h1>						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
<b>SUBSISTENCE SALMON FISHING</b> 		1 King _____ Dog _____ Humpy _____	2 King _____ Dog _____ Humpy _____	3 King _____ Dog _____ Humpy _____	4 King _____ Dog _____ Humpy _____	5 King _____ Dog _____ Humpy _____
6 King _____ Dog _____ Humpy _____	7 King _____ Dog _____ Humpy _____	8 King _____ Dog _____ Humpy _____	9 King _____ Dog _____ Humpy _____	10 King _____ Dog _____ Humpy _____	11 King _____ Dog _____ Humpy _____	12 King _____ Dog _____ Humpy _____
13 King _____ Dog _____ Humpy _____	14 King _____ Dog _____ Humpy _____	15 King _____ Dog _____ Humpy _____	16 King _____ Dog _____ Humpy _____	17 King _____ Dog _____ Humpy _____	18 King _____ Dog _____ Humpy _____	19 King _____ Dog _____ Humpy _____
20 King _____ Dog _____ Humpy _____	21 King _____ Dog _____ Humpy _____	22 King _____ Dog _____ Humpy _____	23 King _____ Dog _____ Humpy _____	24 King _____ Dog _____ Humpy _____	25 King _____ Dog _____ Humpy _____	26 King _____ Dog _____ Humpy _____
27 King _____ Dog _____ Humpy _____	28 King _____ Dog _____ Humpy _____	29 King _____ Dog _____ Humpy _____	30 King _____ Dog _____ Humpy _____			



Preparing salmon for the smoke house, Kaltag, Alaska.

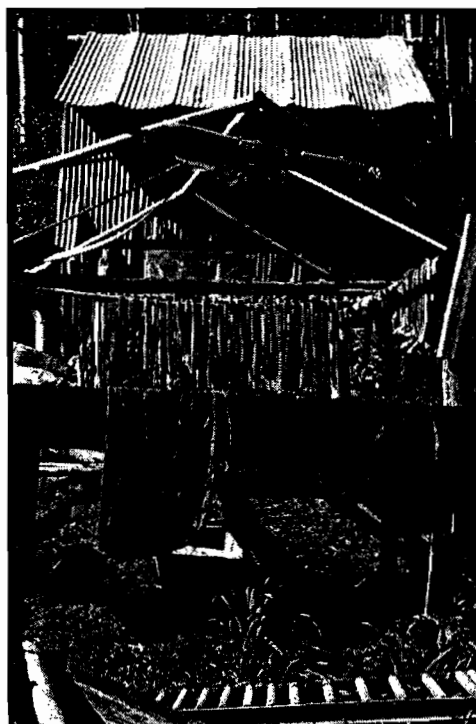

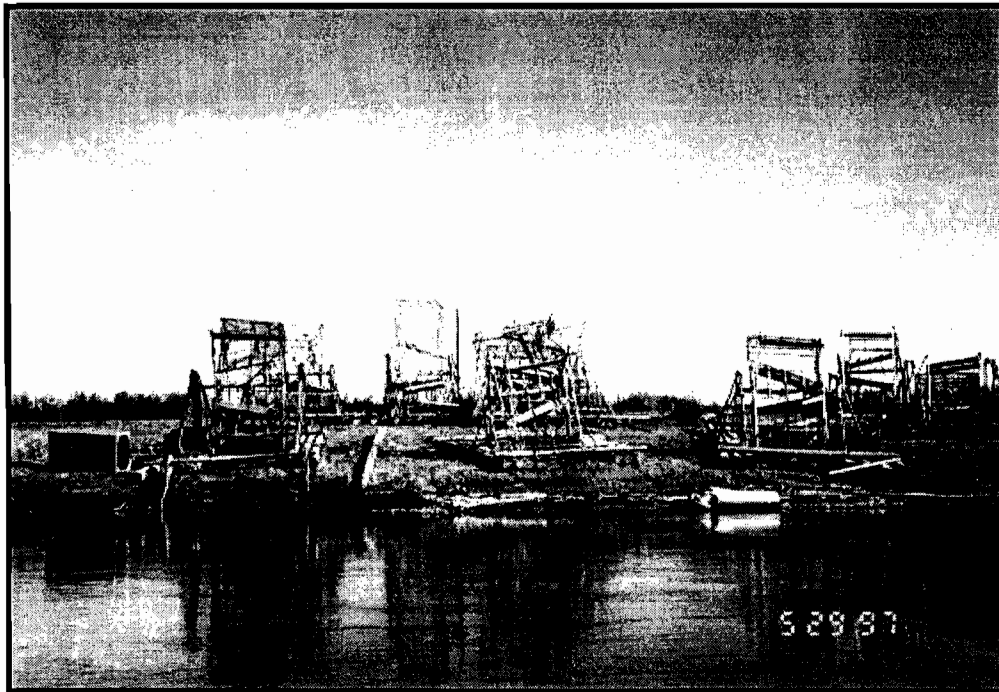


Photo by: Polly Wheeler, Division of Subsistence, Fairbanks

JULY 1999						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
 <b>GOOD LUCK FISHING!!</b>				1 King _____ Dog _____ Humpy _____	2 King _____ Dog _____ Humpy _____	3 King _____ Dog _____ Humpy _____
4 King _____ Dog _____ Humpy _____	5 King _____ Dog _____ Humpy _____	6 King _____ Dog _____ Humpy _____	7 King _____ Dog _____ Humpy _____	8 King _____ Dog _____ Humpy _____	9 King _____ Dog _____ Humpy _____	10 King _____ Dog _____ Humpy _____
11 King _____ Dog _____ Humpy _____	12 King _____ Dog _____ Humpy _____	13 King _____ Dog _____ Humpy _____	14 King _____ Dog _____ Humpy _____	15 King _____ Dog _____ Humpy _____ Fall Chum _____	16 King _____ Dog _____ Humpy _____ Fall Chum _____	17 King _____ Dog _____ Humpy _____ Fall Chum _____
18 King _____ Dog _____ Humpy _____ Fall Chum _____	19 King _____ Dog _____ Humpy _____ Fall Chum _____	20 King _____ Dog _____ Humpy _____ Fall Chum _____	21 King _____ Dog _____ Humpy _____ Fall Chum _____	22 King _____ Dog _____ Humpy _____ Fall Chum _____	23 King _____ Dog _____ Humpy _____ Fall Chum _____	24 King _____ Dog _____ Humpy _____ Fall Chum _____
25 King _____ Dog _____ Humpy _____ Fall Chum _____	26 King _____ Dog _____ Humpy _____ Fall Chum _____	27 King _____ Dog _____ Humpy _____ Fall Chum _____	28 King _____ Dog _____ Humpy _____ Fall Chum _____	29 King _____ Dog _____ Humpy _____ Fall Chum _____	30 King _____ Dog _____ Humpy _____ Fall Chum _____	31 King _____ Dog _____ Humpy _____ Fall Chum _____



Fish wheel landing site, Tanana, Alaska.

Photo by: Bonnie Borba, Division of Commercial Fisheries, Fairbanks

AUGUST 1999						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1 Fall Chum _____ Coho _____	2 Fall Chum _____ Coho _____	3 Fall Chum _____ Coho _____	4 Fall Chum _____ Coho _____	5 Fall Chum _____ Coho _____	6 Fall Chum _____ Coho _____	7 Fall Chum _____ Coho _____
8 Fall Chum _____ Coho _____	9 Fall Chum _____ Coho _____	10 Fall Chum _____ Coho _____	11 Fall Chum _____ Coho _____	12 Fall Chum _____ Coho _____	13 Fall Chum _____ Coho _____	14 Fall Chum _____ Coho _____
15 Fall Chum _____ Coho _____	16 Fall Chum _____ Coho _____	17 Fall Chum _____ Coho _____	18 Fall Chum _____ Coho _____	19 Fall Chum _____ Coho _____	20 Fall Chum _____ Coho _____	21 Fall Chum _____ Coho _____
22 Fall Chum _____ Coho _____	23 Fall Chum _____ Coho _____	24 Fall Chum _____ Coho _____	25 Fall Chum _____ Coho _____	26 Fall Chum _____ Coho _____	27 Fall Chum _____ Coho _____	28 Fall Chum _____ Coho _____
29 Fall Chum _____ Coho _____	30 Fall Chum _____ Coho _____	31 Fall Chum _____ Coho _____				



Dried salmon, Galena, Alaska.

Photo by: Orin Wear, Division of Commercial Fisheries, Fairbanks

SEPTEMBER 1999						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
<b>THANK YOU!!!</b> PLEASE MAIL IN WHEN DONE FISHING			1	2	3	4
			Fall Chum _____ Coho _____	Fall Chum _____ Coho _____	Fall Chum _____ Coho _____	Fall Chum _____ Coho _____
5	6	7	8	9	10	11
Fall Chum _____ Coho _____	Fall Chum _____ Coho _____	Fall Chum _____ Coho _____	Fall Chum _____ Coho _____	Fall Chum _____ Coho _____	Fall Chum _____ Coho _____	Fall Chum _____ Coho _____
12	13	14	15	16	17	18
Fall Chum _____ Coho _____	Fall Chum _____ Coho _____	Fall Chum _____ Coho _____	Fall Chum _____ Coho _____	Fall Chum _____ Coho _____	Fall Chum _____ Coho _____	Fall Chum _____ Coho _____
19	20	21	22	23	24	25
Fall Chum _____ Coho _____	Fall Chum _____ Coho _____	Fall Chum _____ Coho _____	Fall Chum _____ Coho _____	Fall Chum _____ Coho _____	Fall Chum _____ Coho _____	Fall Chum _____ Coho _____
26	27	28	29	30		
Fall Chum _____ Coho _____	Fall Chum _____ Coho _____	Fall Chum _____ Coho _____	Fall Chum _____ Coho _____	Fall Chum _____ Coho _____		

PLEASE CHECK THIS BOX IF YOU DID NOT FISH THIS YEAR ☐

Appendix C.2. Example of the preseason letter mailed with the subsistence harvest calendars, Yukon Area, 1999.

# STATE OF ALASKA

## DEPARTMENT OF FISH AND GAME

### DIVISION OF COMMERCIAL FISHERIES

TONY KNOWLES, GOVERNOR

1300 COLLEGE ROAD  
FAIRBANKS, ALASKA 99701-1599  
PHONE: (907) 459-7274  
FAX: (907) 452-1668

May 3, 1999

Dear Subsistence Salmon Fisherman:

The salmon fishing season is rapidly approaching. In preparation for the fishing season, I have enclosed a 1999 subsistence catch calendar for your household's use. The information you provide through these catch calendars, during the postseason surveys, and on fishing permits are used to estimate the Yukon Area subsistence and personal use salmon harvests. These estimates need to be as accurate as possible as they are used in managing the salmon fisheries. The harvest estimates are also used by the Alaska Board of Fisheries in making regulatory decisions and in international treaty negotiations with Canada.

Use the enclosed calendar to record your household's daily harvest of subsistence fish. If you fish in more than one location, please keep track of the fish you catch in each area. To return the calendar after you are done fishing for the season, simply put it in the mail. **The calendars are postage paid.** You may also give the calendar to the postseason surveyor who will be in your community after the fishing season. **All households that properly fill out and return a 1999 calendar will be eligible for a \$200 LOTTERY. For additional information, read the details inside the cover of the calendar.** Congratulations to Mr. Nick Asetekluk of Russian Mission who was last years' lottery winner.

Many of you have expressed interest in the harvest results of the past year's survey. An estimated 54,481 chinook, 87,303 summer chum, 63,050 fall chum, and 18,130 coho salmon were harvested in the subsistence and personal use fishery in the Yukon Area during the 1998 fishing season. Table 1, on the reverse side of this letter, contains the survey and permit information collected by community and by species. To improve our understanding of the subsistence fishery, information is also collected on the number of people in households, the primary type of fishing gear used, the number of dogs, and the number of whole fish fed to dogs.

I would like to extend my appreciation to all the households who participated in the 1998 survey by returning their catch calendars or by responding to the department's postseason personal, telephone or mail interviews. If you would like more detailed information concerning the results of the 1998 survey, feel free to contact me at the telephone number indicated on the letterhead. The Yukon Area subsistence survey project is successful because of the assistance of fishermen throughout the drainage. Thank you again for your cooperation!

Sincerely,

*Bonnie Borba*

Bonnie Borba  
Fishery Biologist

## Appendix C.2. (Page 2 of 2)

TABLE 1. PRELIMINARY SUBSISTENCE AND PERSONAL USE SALMON HARVEST ESTIMATES, YUKON AREA, 1998 a/

Village	Estimation Method b/	Total Households or Permits Issued	Households Contacted or Permits Returned	Estimated Fishing Households	Estimated Salmon Harvest			
					Chinook	Summer Chum	Fall Chum	Coho
Hooper Bay	Survey	198	50	102	13	261	0	145
Scammon Bay	Survey	81	23	47	378	1,101	34	204
<b>Coastal District Subtotal</b>		<b>277</b>	<b>73</b>	<b>149</b>	<b>391</b>	<b>1,362</b>	<b>34</b>	<b>349</b>
Sheldon Point	Survey	35	33	21	527	1,872	266	229
Alakanuk	Survey	120	32	88	1,930	5,643	685	292
Emmonak c/	Survey	159	62	84	2,396	9,558	867	696
Kotlik d/	Survey	95	27	65	2,389	9,815	1,365	954
<b>District 1 Subtotal</b>		<b>409</b>	<b>154</b>	<b>256</b>	<b>7,242</b>	<b>26,888</b>	<b>3,163</b>	<b>2,171</b>
Mt. Village e/	Survey	148	41	95	2,533	9,586	2,031	954
Pitkas Point	Survey	31	26	20	817	1,302	233	305
St. Marys	Survey	116	37	83	2,679	9,047	416	290
Pilot Station f/	Survey	90	39	46	1,715	5,042	1,162	413
Marshall	Survey	82	21	30	1,711	1,293	640	335
<b>District 2 Subtotal</b>		<b>447</b>	<b>164</b>	<b>254</b>	<b>9,455</b>	<b>26,280</b>	<b>4,462</b>	<b>2,297</b>
Russian Mission	Survey	50	18	24	1,314	702	137	233
Holy Cross	Survey	64	27	30	2,648	269	1,095	100
Shageluk	Survey	39	28	19	552	5,501	329	87
<b>District 3 Subtotal</b>		<b>153</b>	<b>73</b>	<b>73</b>	<b>4,514</b>	<b>6,472</b>	<b>1,561</b>	<b>400</b>
Anvik	Survey	39	36	20	1,025	2,139	388	20
Grayling	Survey	55	23	30	2,177	4,032	848	133
Kaltag	Survey	51	17	36	1,870	175	499	71
Nulato	Survey	107	25	73	4,147	3,518	387	34
Koyukuk	Survey	43	13	15	800	1,819	1,583	421
Galena	Survey	203	46	47	1,868	2,333	1,915	322
Ruby	Survey	84	14	24	3,891	2,251	2,427	1,459
<b>District 4 Subtotal</b>		<b>582</b>	<b>174</b>	<b>245</b>	<b>15,578</b>	<b>16,267</b>	<b>7,827</b>	<b>2,460</b>
Huslia	Survey	84	19	14	23	449	0	128
Hughes	Survey	26	26	14	91	334	80	5
Alalakaket	Survey	61	22	13	85	901	11	0
Alatna	Survey	13	13	3	4	13	0	0
Bettles	Survey	27	22	2	20	82	0	0
<b>Koyukuk River Subtotal</b>		<b>211</b>	<b>102</b>	<b>46</b>	<b>223</b>	<b>1,779</b>	<b>71</b>	<b>133</b>
Tanana g/	Survey	128	47	45	5,212	1,966	24,966	2,572
Rampart	Survey	25	22	5	885	19	100	20
Stevens Village	Survey	36	29	19	1,232	171	1,078	63
Birch Creek	Survey	14	12	4	48	0	0	0
Beaver	Survey	32	30	13	470	15	409	0
Ft. Yukon	Survey	192	42	100	1,771	30	3,035	39
Fairbanks NSB	Permit	44	43	27	1,231	57	96	11
Circle	Permit	16	14	7	685	1	37	0
Central	Permit	8	8	6	170	1	0	0
Eagle	Permit	55	51	32	2,473	52	543	132
Other h/	Permit	22	22	9	446	2	50	2
<b>District 5 Subtotal</b>		<b>572</b>	<b>320</b>	<b>267</b>	<b>14,623</b>	<b>2,314</b>	<b>30,302</b>	<b>2,839</b>
Venetie	Survey	55	16	16	166	0	658	0
Chalkyitsik	Survey	35	32	6	11	0	433	0
<b>Chandalar/Black Rivers Subtotal</b>		<b>90</b>	<b>48</b>	<b>22</b>	<b>179</b>	<b>0</b>	<b>1,091</b>	<b>0</b>
Manley	Permit	18	18	14	214	215	4,411	2,362
Minto	Permit	78	67	26	275	148	505	31
Nenana	Permit	47	44	27	1,207	5,041	6,781	3,519
Healy	Permit	11	10	6	18	0	1,642	765
Fairbanks NSB	Permit	141	139	75	552	682	962	795
Other i/	Permit	50	49	17	10	2	71	9
<b>District 6 Tanana River Subtotal</b>		<b>345</b>	<b>327</b>	<b>165</b>	<b>2,276</b>	<b>6,068</b>	<b>14,372</b>	<b>7,481</b>
Survey Village Subtotal		2,596	970	1,231	47,200	61,249	47,805	10,504
Permit Area Subtotal j/		490	485	248	7,281	6,201	15,098	7,628
<b>Yukon River Area Total</b>		<b>3,086</b>	<b>1,456</b>	<b>1,477</b>	<b>54,481</b>	<b>87,450</b>	<b>82,903</b>	<b>18,130</b>

a/ Source: "Subsistence and Personal Use Salmon Harvests, Yukon Area, 1998" (In prep.) by Borba, B.M. and Hamner, H.H. Alaska Department of Fish and Game (ADF&G). Harvests are listed by area and by fishermen's community of residence.

b/ Includes permit information received as of March 18, 1999.

c/ Includes 712 chinook, 1,228 summer chum, 764 fall chum, and 342 coho salmon from ADF&G test fish catches.

d/ Includes 323 chinook, 1,062 summer chum, 1,236 fall chum, and 450 coho salmon from ADF&G test fish catches.

e/ Includes 8 chinook, 684 fall chum and 567 coho salmon from Bering Sea Fishermen's Association (BSFA) test fish catches.

f/ Includes 435 chinook, 2,209 summer chum, 1,110 fall chum and 364 coho salmon from ADF&G test fish catches.

g/ Includes 147 summer chum salmon from United States Fish and Wildlife Service (USFWS) "Rapids" tagging fish wheel catches.

h/ Other Includes residents of communities not listed in this section who fished in District 5 of the Yukon River.

i/ Other Includes residents of communities not listed in this section who fished in District 6 of the Tanana River.

j/ Permit totals include 45 permits issued for two different areas and include Tolovana River pike permits. Permit totals do not include four subsistence salmon permits issued to Stevens Village residents. Permit harvest information from Stevens Village residents was included in the survey data.

Appendix C.3. Example of the subsistence salmon postseason interview form, Yukon Area, 1999.

Community _____	HHID# _____
Date of Survey _____	Person Interviewed _____
Interviewer _____	Relation to HH _____

**1999 Post-Season Subsistence Salmon Harvest Survey Yukon Area**  
**CONFIDENTIAL INFORMATION**

1. We would like to make sure we have the correct name and address for your household.
 

Head of Household \_\_\_\_\_

Mailing Address \_\_\_\_\_ Telephone: \_\_\_\_\_

Permanent Note \_\_\_\_\_

Significant Other \_\_\_\_\_

Permanent Note \_\_\_\_\_

Adult household member was contacted and declined to be interviewed. [ ] Reason given: \_\_\_\_\_
2. Did anyone in your household catch salmon for subsistence use this year? Yes \_\_\_\_ No \_\_\_\_ (If no go to area II.)  
Fish use includes salmon eaten fresh, frozen, dried, smoked, and those used for dog food. Include all salmon kept for subsistence use. Include female carcasses from which roe was removed and sold commercially.

**I. HOUSEHOLDS THAT FISHED**

3. May I have your fish catch calendar?  
 Picked up by interviewer \_\_\_\_ Didn't get one \_\_\_\_ Didn't Use \_\_\_\_ Not available \_\_\_\_ Already sent In \_\_\_\_  
 If you used a calendar are all the fish harvested on it? Yes \_\_\_\_ No \_\_\_\_ (if no, estimate remainder on calendar)  
 How many total salmon did you or your fishing group catch this year? ("group" may include other households)  
 CHINOOK \_\_\_\_\_ SUMMER CHUM \_\_\_\_\_ FALL CHUM \_\_\_\_\_ COHO \_\_\_\_\_ PINK \_\_\_\_\_  
 How many households help catch these fish? \_\_\_\_ (Names) \_\_\_\_\_
4. How many total salmon did your household catch for subsistence purposes this year?  
 (Include only fish caught by this household, not the group, includes fish taken home from commercial periods.)  
 CHINOOK \_\_\_\_\_ SUMMER CHUM \_\_\_\_\_ FALL CHUM \_\_\_\_\_ COHO \_\_\_\_\_ PINK \_\_\_\_\_
5. How many of your households' salmon catch was taken commercially? (i.e. retained by a commercial fisherman during a commercial fishing period for subsistence use. Include female carcasses with roe removed and sold separately and all male salmon.)  
 CHINOOK \_\_\_\_\_ SUMMER CHUM \_\_\_\_\_ FALL CHUM \_\_\_\_\_ COHO \_\_\_\_\_ PINK \_\_\_\_\_
6. Where do you catch your subsistence salmon? (Circle all that apply and show harvest by area if more than one)  
 Ocean 1 2 3 4A 4B 4C 5A 5B 5C 5D Innoko, Koyukuk, Chandalar, Porcupine, Black  
 Area \_\_\_\_ CHINOOK \_\_\_\_\_ SUMMER CHUM \_\_\_\_\_ FALL CHUM \_\_\_\_\_ COHO \_\_\_\_\_ PINK \_\_\_\_\_  
 Area \_\_\_\_ CHINOOK \_\_\_\_\_ SUMMER CHUM \_\_\_\_\_ FALL CHUM \_\_\_\_\_ COHO \_\_\_\_\_ PINK \_\_\_\_\_
7. What is your households' primary type of salmon fishing gear? (In order of importance 1= primary)  
 Set net \_\_\_\_ Drift net \_\_\_\_ Fish Wheel \_\_\_\_ Hook & Line \_\_\_\_ Other \_\_\_\_\_
8. How many salmon did you keep for your household's use?  
 CHINOOK \_\_\_\_\_ SUMMER CHUM \_\_\_\_\_ FALL CHUM \_\_\_\_\_ COHO \_\_\_\_\_ PINK \_\_\_\_\_
9. Did your household share the salmon catch with any other households? (Names, HHIDs, Species and Numbers)  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_
10. How many of the fish you caught were lost to spoilage or wild animals (i.e. bears and birds)? (Include these numbers in the catch, by species.) \_\_\_\_\_

**II. ALL HOUSEHOLDS**

11. Did your household catch any other fish besides salmon this year? Yes \_\_\_\_\_ No \_\_\_\_\_  
(Harvest numbers should include from September/October of last year to now.)

LG WHITEFISH \_\_\_\_\_ SM WHITEFISH \_\_\_\_\_ SHEEFISH \_\_\_\_\_ BURBOT \_\_\_\_\_ PIKE \_\_\_\_\_ BLACKFISH \_\_\_\_\_  
GRAYLING \_\_\_\_\_ SUCKERS \_\_\_\_\_ TROUT (Arctic Char) \_\_\_\_\_ EELS (Lamprey) \_\_\_\_\_ TOMCOD (Saffron) \_\_\_\_\_

12. Was your household given any salmon? Yes \_\_\_\_\_ No \_\_\_\_\_

Subsistence Fishermen (Name) \_\_\_\_\_

CHINOOK \_\_\_\_\_ SUMMER CHUM \_\_\_\_\_ FALL CHUM \_\_\_\_\_ COHO \_\_\_\_\_ PINK \_\_\_\_\_

Subsistence Fishermen (Name) \_\_\_\_\_

CHINOOK \_\_\_\_\_ SUMMER CHUM \_\_\_\_\_ FALL CHUM \_\_\_\_\_ COHO \_\_\_\_\_ PINK \_\_\_\_\_

Commercial Fishermen (Name) (list only fish retained for subsistence use while commercial fishing) \_\_\_\_\_

CHINOOK \_\_\_\_\_ SUMMER CHUM \_\_\_\_\_ FALL CHUM \_\_\_\_\_ COHO \_\_\_\_\_ PINK \_\_\_\_\_

From Test Fish Projects (Location) \_\_\_\_\_

CHINOOK \_\_\_\_\_ SUMMER CHUM \_\_\_\_\_ FALL CHUM \_\_\_\_\_ COHO \_\_\_\_\_ PINK \_\_\_\_\_

13. How many people live in your household? \_\_\_\_\_

14. How many dogs (including puppies) does your household have? \_\_\_\_\_ (If none go to question 15)

Do you feed whole salmon to your dogs? Yes \_\_\_\_\_ No \_\_\_\_\_ Only Feed Scraps \_\_\_\_\_ (If no go to question 15)

Were any of the salmon put up for the dogs from the commercial fishery? Yes \_\_\_\_\_ No \_\_\_\_\_ Some \_\_\_\_\_

Estimate harvest of salmon put up for dogs this year by fishery:

(These can be subsistence and/or commercial. Numbers should represent whole fish, not scraps.)

(subsistence harvest) JACKS/KINGS \_\_\_\_\_ SUMMER CHUM \_\_\_\_\_ FALL CHUM \_\_\_\_\_ COHO \_\_\_\_\_

(commercial harvest) JACKS/KINGS \_\_\_\_\_ SUMMER CHUM \_\_\_\_\_ FALL CHUM \_\_\_\_\_ COHO \_\_\_\_\_

Have you ever fed jacks or kings to dogs in the past? Yes \_\_\_\_\_ No \_\_\_\_\_

15. Did your household get enough subsistence salmon this year? Yes \_\_\_\_\_ No \_\_\_\_\_ Could not estimate \_\_\_\_\_

If the answer is no, ask:

Why didn't you meet your salmon needs this year? \_\_\_\_\_

THANK YOU FOR YOUR HELP. THIS HARVEST INFORMATION IS USED TO DOCUMENT THE SUBSISTENCE SALMON NEEDS AND TO TRY TO MAKE SURE THERE WILL BE ENOUGH SALMON FOR THE FUTURE.  
Interviewer, please note any comments about this interview or anything of value for assisting data analysis.

**THIS HOUSEHOLD'S TOTAL SUBSISTENCE SALMON CATCH** (This area is to be filled in by the surveyor after the interview.)  
(Subtract numbers obtained in question 5 from numbers obtained from question 4.)

CHINOOK \_\_\_\_\_ SUMMER CHUM \_\_\_\_\_ FALL CHUM \_\_\_\_\_ COHO \_\_\_\_\_ PINK \_\_\_\_\_


**THIS HOUSEHOLD'S TOTAL SUBSISTENCE SALMON USE** (This area is to be filled in by the surveyor after the interview.)  
(Add numbers obtained from question 7 to numbers obtained from question 12.)

CHINOOK \_\_\_\_\_ SUMMER CHUM \_\_\_\_\_ FALL CHUM \_\_\_\_\_ COHO \_\_\_\_\_ PINK \_\_\_\_\_

Complete Survey \_\_\_\_\_ Partial Survey \_\_\_\_\_ No Survey \_\_\_\_\_



Appendix C.4. Example of the Kantishna River and Upper Yukon River subsistence fishing permit application, 1999.

<b>Household Application and Permit for Subsistence Fishing</b>		
<b>Alaska Department of Fish and Game, Division of Commercial Fisheries</b> 1300 College Road, Fairbanks, AK 99701 Telephone (907) 459-7274		
Name _____ <small>(PLEASE PRINT)</small>	Telephone _____ <small>(Home, Work, or Message)</small>	
Mailing Address _____ <div style="display: flex; justify-content: space-between; width: 100%;"> <span>City</span> <span>State</span> <span>Zipcode</span> </div>		
Total Household Member(s) _____ <small>(Include yourself)</small>	Other Household Member(s) _____ <small>(Names of other household members authorized to fish this permit)</small>	
Number of Dogs in Household _____ Do you feed whole salmon to dogs? (Circle one) <b>Yes</b> <b>No</b>		
Area to be Fished: (Circle one) <b>Kantishna River</b> <b>Yukon River Bridge</b> <b>Circle/Eagle</b>		
Fishing Gear to be Used: Primary _____ Secondary _____		
<p><b>Conditions of Permit:</b> All regulations pertaining to subsistence fishing in the area are to be observed. Anyone fishing this household's permit must be named above and carry this permit on their person during any fishing activity. It is unlawful to buy or sell subsistence-taken fish, their parts, or their eggs. For a 24-hour recording of subsistence, personal use or commercial salmon fishing schedules, call (907) 459-7387.</p> <p>An accurate record of fish taken under authority of this permit must be recorded on the reverse side of this permit on the same day fish are landed. Return this permit, whether you fished or not, with your completed catch information to the Alaska Department of Fish and Game, Division of Commercial Fisheries, 1300 College Road, Fairbanks, Alaska, 99701 within <u>10 days</u> after permit expiration date. <b>FAILURE TO RETURN THIS PERMIT OR REPORT THIS HOUSEHOLD'S CATCH INFORMATION MAY RESULT IN YOU BEING DENIED A HOUSEHOLD PERMIT NEXT YEAR.</b></p>		
<div style="display: flex; justify-content: space-between;"> <span>X _____ Date</span> <span>Birthdate or Drivers License No. _____</span> </div>		
Signature of Permittee - I hereby claim I am a resident of Alaska and that the above information I have provided is a true statement as witnessed by my signature.		
<b><u>TO BE COMPLETED BY ISSUING OFFICER</u></b>		
The above named household member(s) is authorized to take fish according to the following stipulations: Permit is valid for the location marked below and expires October 15 of the year issued, unless otherwise noted.		
SK <input type="checkbox"/> Kantishna River	Under authority of this permit, 60 chinook salmon and 500 chum salmon may be taken from the Kantishna River drainage from the date of issue through August 15. From August 15 through December 31, a total of 450 chum salmon may be taken. The permit holder is required to keep daily and cumulative harvest information at the fishing site that is accessible to department personnel. After August 15, the Kantishna River drainage fishery harvest limit is 2,000 chum salmon. Once the fishery limit is taken, the directed chum salmon subsistence fishery will close by Emergency Order. Permit expiration date is December 31 of the year issued.	
SE <input type="checkbox"/> Circle, Eagle	Under authority of this permit, fish may be taken from the Yukon River drainage from the mouth of Twenty-two Mile Slough upstream to the U.S./Canada border.	
SY <input type="checkbox"/> Yukon Bridge	Under authority of this permit, fish may be taken from the Yukon River drainage from the mouth of Hess Creek to the mouth of the Dall River.	
_____ Signature of Issuing Officer	_____ Date Issued	_____ Permit Number

Revised 2/99

## YUKON AREA SUBSISTENCE FISHERY CATCH FORM

**THIS RECORD MUST BE SUBMITTED TO THE DEPARTMENT OF FISH AND GAME WITHIN 10 DAYS AFTER THE EXPIRATION DATE OF THE PERMIT, WHETHER YOU FISHED OR NOT. FAILURE TO RETURN THIS FORM MAY BE CAUSE TO REFUSE YOU A SUBSISTENCE PERMIT NEXT YEAR.**

[illegible]**RETURN TO:**

**Alaska Department of Fish and Game**  
**Division of Commercial Fisheries**  
**1300 College Road**  
**Fairbanks, AK 99701**  
**Telephone: (907) 459-7274**

**PLEASE CHECK THIS BOX IF YOU DID NOT FISH THIS YEAR** ☐

**Sign this Catch Report when you return it.**


Date \_\_\_\_\_

The Alaska Department of Fish and Game administers all programs and activities free from discrimination on the basis of sex, color, race, religion, national origin, age, marital status, pregnancy, parenthood, or disability. For information on alternative formats available for this and other department publications, contact the department ADA Coordinator at (voice) 907-465-4120 or (telecommunication device for the deaf) 1-800-478-3648.

Appendix C.5. Example of the Tanana River subsistence fishing permit application, 1999.

### Household Application and Permit for Subsistence Fishing

Alaska Department of Fish and Game, Division of Commercial Fisheries  
1300 College Road, Fairbanks, AK 99701 Telephone (907) 459-7274



Name \_\_\_\_\_ Telephone \_\_\_\_\_  
(PLEASE PRINT) (Home, Work, or Message)

Mailing Address \_\_\_\_\_  
City State Zipcode

Total Household Member(s) \_\_\_\_\_ Other Household Member(s) \_\_\_\_\_  
(Include yourself) (Names of other household members authorized to fish this permit)

Number of Dogs in Household \_\_\_\_\_ Do you feed whole salmon to dogs? (Circle one) Yes No

Area to be Fished: (Circle one) Tanana 6A Tanana 6B Upper Tanana (above the Fairbanks Nonsubsistence Area)

Fishing Gear to be Used: Primary \_\_\_\_\_ Secondary \_\_\_\_\_

**Conditions of Permit:** All regulations pertaining to subsistence fishing in the area are to be observed. Anyone fishing this household's permit must be named above and carry this permit on their person during any fishing activity. It is unlawful to buy or sell subsistence-taken fish, their parts, or their eggs. For a 24-hour recording of subsistence, personal use or commercial salmon fishing schedules, call (907) 459-7387.

An accurate record of fish taken under authority of this permit must be recorded on the reverse side of this permit on the same day fish are landed. PERMITTEES FISHING IN THE UPPER PORTION OF SUBDISTRICT 6-B (three miles upstream of Totchaket Slough) ARE REQUIRED TO REPORT THEIR WEEKLY CATCH BY CALLING THE DEPARTMENT OF FISH AND GAME AT (907) 459-7388 BY 4:30 P.M. EVERY THURSDAY. Return this permit, whether you fished or not, with your completed catch information to the Alaska Department of Fish and Game, Division of Commercial Fisheries, 1300 College Road, Fairbanks, Alaska, 99701 within 10 days after the permit expiration date. FAILURE TO RETURN THIS PERMIT OR REPORT THIS HOUSEHOLD'S CATCH INFORMATION MAY RESULT IN YOU BEING DENIED A HOUSEHOLD PERMIT NEXT YEAR.

X \_\_\_\_\_ Date \_\_\_\_\_ Birthdate or Drivers License No. \_\_\_\_\_  
Signature of Permittee - I hereby claim I am a resident of Alaska and that the information I have provided on this permit is true as witnessed by my signature.

**TO BE COMPLETED BY ISSUING OFFICER**

The above named household member(s) is authorized to take fish according to the following stipulations. Permit is valid for the location marked and expires October 15 of the year issued, unless otherwise noted.

SA ☐ Tanana/6A Under authority of this permit 60 chinook salmon and 500 chum salmon may be taken from the date of issue through August 15. In addition, from August 16 through October 15, a combined total of 2,000 chum and coho salmon may be taken.  
(Note: A separate permit is required for the Kantishna River drainage.)

SB ☐ Tanana/6B

SU ☐ Upper Tanana Under authority of this permit fish may be taken in the upper Tanana River drainage upstream of the Fairbanks Nonsubsistence Area. Permit expires December 31 of the year issued.

\_\_\_\_\_  
Signature of Issuing Officer Date Issued Permit Number

Revised 4/99

# YUKON AREA SUBSISTENCE FISHERY CATCH FORM

**THIS RECORD MUST BE SUBMITTED TO THE DEPARTMENT OF FISH AND GAME WITHIN 10 DAYS AFTER THE EXPIRATION DATE OF THE PERMIT, WHETHER YOU FISHED OR NOT. FAILURE TO RETURN THIS FORM MAY BE CAUSE TO REFUSE YOU A SUBSISTENCE PERMIT NEXT YEAR.**

[illegible]

**RETURN TO:**

**Alaska Department of Fish and Game**  
**Division of Commercial Fisheries**  
**1300 College Road**  
**Fairbanks, AK 99701**  
**Telephone: (907) 459-7274**

**PLEASE CHECK THIS BOX IF YOU DID NOT FISH THIS YEAR**


7

**Sign this Catch Report when you return it.**

Date \_\_\_\_\_

The Alaska Department of Fish and Game administers all programs and activities free from discrimination on the basis of sex, color, race, religion, national origin, age, marital status, pregnancy, parenthood, or disability. For information on alternative formats available for this and other department publications, contact the department ADA Coordinator at (voice) 907-465-4120 or (telecommunication device for the deaf) 1-800-478-3648.

Appendix C.6. Example of the Yukon Area personal use fishing permit application, 1999.

<b>Household Application and Permit for Personal Use Salmon Fishing</b>		
Dept. of Fish and Game, Commercial Fisheries Management and Development Division 1300 College Road, Fairbanks, AK 99701 Telephone (907) 459-7274		
Name _____ <small>(PLEASE PRINT)</small>		Telephone _____ <small>(Home, Work, or Message)</small>
Mailing Address _____ <div style="display: flex; justify-content: space-between; width: 100%;"><div>City _____</div><div>State _____</div><div>Zipcode _____</div></div>		
Total Household Member(s) _____ <small>(Include yourself)</small>		Other Household Member(s) _____ <small>(Names of other household members authorized to fish this permit)</small>
Area to be Fished: Subdistrict 6-C - Including the Tanana River upstream of the confluence with Wood River to the mouth of the Salcha River.		
Fishing Gear to be Used: Primary _____ Secondary _____		
<p><b>Conditions of Permit:</b> All regulations pertaining to personal use fishing in the area to be fished are to be observed. Anyone fishing this household's permit must be named above and carry this permit on their person during any fishing activity. For a 24-hour recording of personal use, subsistence, or commercial salmon fishing schedules, call (907) 459-7387. It is unlawful to buy, sell, trade, or barter fish or their parts, taken under personal use.</p> <p>An accurate record of fish taken under authority of this permit must be recorded on the reverse side of this permit on the same day the fish are landed. <b>PERSONAL USE SALMON PERMITTEES ARE REQUIRED TO REPORT THEIR WEEKLY CATCHES BY CALLING THE DEPARTMENT OF FISH AND GAME AT (907) 459-7388 BY 4:30 P.M. EVERY THURSDAY.</b> Return this permit with your completed catch information within <b>10 days</b> after the permit expiration date. <b>FAILURE TO RETURN THIS PERMIT OR REPORT THIS HOUSEHOLD'S CATCH INFORMATION MAY RESULT IN YOU BEING DENIED A HOUSEHOLD PERMIT NEXT YEAR.</b></p> <p style="text-align: center;">A resident Alaska sport fishing license is required by 5 AAC 77.010. Permit is invalid unless permittee has in their possession a valid resident Alaska sport fishing license.</p>		
X _____ Date _____ Sport Fish License No. _____ Signature of Permittee - I hereby claim I am a resident of Alaska and that the above information I have provided on this permit is true as witnessed by my signature.		
<b><u>TO BE COMPLETED BY ISSUING OFFICER</u></b>		
The above named household member(s) is authorized to take salmon according to the following stipulations: Permit is valid for Subdistrict 6-C and expires October 15 of the year issued, unless otherwise noted.		
Tanana 6C/PC Under authority of this permit 10 chinook salmon and 75 chum salmon may be taken from the date of issue through August 15. In addition, from August 16 through October 15, a combined total of 75 chum and coho salmon may be taken.		
Signature of Issuing Officer _____	Date Issued _____	PC - _____ Permit Number
Revised 4/98		

# YUKON AREA PERSONAL USE SALMON FISHERY CATCH FORM

**THIS RECORD MUST BE SUBMITTED TO THE DEPARTMENT OF FISH AND GAME WITHIN 10 DAYS AFTER THE EXPIRATION DATE OF THE PERMIT WHETHER YOU FISHED OR NOT. FAILURE TO RETURN THIS FORM MAY BE CAUSE TO REFUSE YOU A PERSONAL USE PERMIT NEXT YEAR.**

[illegible]

**RETURN TO:** Alaska Department of Fish and Game  
Commercial Fisheries Management  
and Development Division  
1300 College Road  
Fairbanks, AK 99701  
Telephone: (907) 459-7274

**PLEASE CHECK THIS BOX IF YOU DID NOT FISH THIS YEAR**

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**Sign this Catch Report when you return it.**

Date \_\_\_\_\_

Appendix C.7. Example of the letter sent to selected subsistence fishermen from the listed villages that complied with 1998 reporting requirements, announcing the dates and times for 1999 permit issuance, Yukon Area.

# STATE OF ALASKA

## DEPARTMENT OF FISH AND GAME

### DIVISION OF COMMERCIAL FISHERIES

TONY KNOWLES, GOVERNOR

1300 COLLEGE ROAD  
FAIRBANKS, ALASKA 99701-1599  
PHONE: (907) 459-7274  
FAX: (907) 452-1668

May 5, 1999

Dear Subsistence Fishermen:

Regulations require subsistence fishermen to obtain a permit prior to fishing in three areas within the upper Yukon River drainage. Subsistence fishing permits are required upstream of Twenty-two Mile Slough to the Canada Border (includes the villages of Circle and Eagle), near the "Yukon River Bridge" (between Hess Creek and the Dall River), and within the Tanana River drainage (except in the Fairbanks Nonsubsistence Area). Our records indicate that you were issued a 1998 subsistence permit for one of the above areas. If you are planning to fish in the upper Yukon River drainage in 1999, we are providing you with the opportunity to obtain a subsistence fishing permit in the following villages at the dates and times indicated:

Village	Place	Day/Date	Time
MINTO	Lake View Lodge	Tuesday, May 18, 1999	11:30 a.m. to 3:00 p.m.
MANLEY	Manley Roadhouse	Wednesday, May 19, 1999	10:00 a.m. to 1:30 p.m.
EAGLE	Post Office	Monday, May 24, 1999	10:30 a.m. to 2:00 p.m.
NENANA	Boat Landing	Wednesday, May 26, 1999	10:30 a.m. to 2:30 p.m.
CENTRAL	Post Office	Thursday, May 27, 1999	11:30 a.m. to 3:00 p.m.
CIRCLE	Boat Landing	Friday, May 28, 1999	11:00 a.m. to 2:00 p.m.
DELTA JUNCT.	Delta Fish and Game	Tuesday, May 18, 1999	10:00 a.m. to 10:30 p.m.
DOT LAKE	Community Hall	Tuesday, May 18, 1999	12:00 noon to 1:30 p.m.
TANACROSS	Community Center	Tuesday, May 18, 1999	3:00 p.m. to 6:00 p.m.
TOK	Tok Fish and Game	Wednesday, May 19, 1999	8:00 a.m. to 10:00 a.m.
NORTHWAY	Community Hall	Wednesday, May 19, 1999	12:00 noon to 5:00 p.m.

To be issued a subsistence fishing permit, please complete the top portion of the enclosed "Household Application and Permit" form. Present this form to the department representative at a place and time indicated above. The issuing officer will complete the bottom portion of the application and return the 1999 subsistence fishing permit to you.

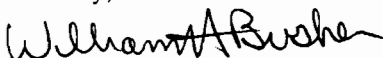
If you would like to obtain a permit by mail, please complete the top portion of the enclosed "Household Application and Permit" form and return the application (including the carbon copy) to the address indicated at the top of the application. Address the letter to the attention of the Subsistence Permit Issuing Officer. The bottom section of the application will be completed by the issuing officer and returned by mail. The application is not a valid permit until you have completed and signed the top portion, and the issuing officer has completed and signed the bottom.

Subsistence permits are also available at the Alaska Department of Fish and Game offices in Delta Junction, Tok, and Fairbanks during regular business hours.

I would like to extend my appreciation to all the households who have returned their previous permits in a timely manner. Our effort to document the Yukon Area subsistence harvest has been successful because of the cooperation of fishermen throughout the drainage.

If you have any questions or comments, please contact me.

Sincerely,

A handwritten signature in black ink that reads "William H. Busher". The signature is fluid and cursive, with the first name "William" and last name "Busher" clearly legible.

William H. Busher  
Fishery Biologist  
Division of Commercial Fisheries

Enclosures: Permit Application



Appendix C.8. Example of the first subsistence fishing permit reminder letter sent to households that complied with the inseason reporting requirement by telephone but had not reported postseason, 1999.

<h1 style="margin: 0;">STATE OF ALASKA</h1> <h2 style="margin: 0;">DEPARTMENT OF FISH AND GAME</h2> <h3 style="margin: 0;">DIVISION OF COMMERCIAL FISHERIES</h3>	<p><b>TONY KNOWLES, GOVERNOR</b></p> <p>1300 COLLEGE ROAD FAIRBANKS, ALASKA 99701-1599 PHONE: (907) 459-7274 FAX: (907) 452-1668</p>
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October 28, 1999

Jane Doe  
P.O. Box ###  
Riverbanks, AK 99###

Dear Jane

The Department of Fish and Game (department) issued you subsistence fishing permit SB-####-99 for the 1999 fishing season. Your permit expired on October 15, 1999, however, our office has not received your expired permit. The harvest information you recorded on the permit is needed to accurately document the salmon harvests within the Tanana River drainage. Our records show that we received telephone catch reports from you during the 1999 fishing season. Your telephone reports indicate you harvested the following number of fish:

Chinook/King	50	Summer Chum	3	Fall Chum	0	Coho	0
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We appreciate your reporting efforts and we utilize the telephone catch reports for inseason fisheries management. Although you may feel you have completed your reporting requirement, a condition of the permit requires that you keep an accurate record of your catch and return your expired permit with the total number of fish you harvested this season. If you have recently returned your permit, please disregard this reminder notice. If you are unable to locate your expired permit, please fill in the total number of fish you harvested this past season and return this letter to the department.

Chinook/King _____	Summer Chum _____	Fall Chum _____	Coho _____
Whitefish _____	Pike _____	Grayling _____	Suckers _____
Burbot _____	Other (specify species) _____		

Number of whole salmon fed to dogs or put up for dog food \_\_\_\_\_

Signature _____	Date _____
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The subsistence salmon fishery was not restricted this season. However, the majority of the salmon index spawning streams did not meet minimum biological escapement goals in 1999. Similar to last season, poor salmon returns were observed throughout western Alaska, suggesting poor marine survival. If you have any questions, feel free to contact me.

Sincerely,

**Bonnie Borba**  
Fishery Biologist

# STATE OF ALASKA

## DEPARTMENT OF FISH AND GAME

### DIVISION OF COMMERCIAL FISHERIES

TONY KNOWLES, GOVERNOR

1300 COLLEGE ROAD  
FAIRBANKS, ALASKA 99701-1599  
PHONE: (907) 459-7274  
FAX: (907) 452-1668

November 29, 1999

Jane Doe  
P.O. Box ###  
Riverbanks, AK 99###

Dear Jane:

The Department of Fish and Game (department) issued personal use fishing permit PC-####-99 to you for the 1999 fishing season. To date, the department has not received your expired permit and harvest information. Regulations require you to keep an accurate record of your harvest and to return the expired permit with the harvest record at the end of the season. Even if you did not fish, or caught no fish, you must return your permit or this letter. **FAILURE TO REPORT YOUR HARVEST INFORMATION MAY RESULT IN DENIAL OF A PERMIT NEXT YEAR.**

If you have recently returned your permit, please disregard this reminder notice. If you have misplaced your permit, please answer the following questions and return this letter in the postage-paid envelope provided.

I fished in Subdistrict 6-C, Fairbanks Nonsubsistence Area, in 1999. (Circle one)      Yes      No

If you fished, please provide the number of freshwater finfish you caught below:

Chinook/King \_\_\_\_\_ Summer Chum \_\_\_\_\_ Fall Chum \_\_\_\_\_ Coho \_\_\_\_\_

Whitefish \_\_\_\_\_ Pike \_\_\_\_\_ Grayling \_\_\_\_\_ Burbot \_\_\_\_\_

Suckers \_\_\_\_\_ Other (specify species) \_\_\_\_\_

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

The information from your permit is needed to accurately document this past season's harvest. This is your second and **FINAL** notice that we have not received your expired permit with the recorded harvest information.

Sincerely,

Bonnie Borba  
Fishery Biologist

